NEW ORLEANS MEDICAL AND SURGICAL JOURNAL

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Vol. LXX SEPTEMBER, 1917 No. 3

EDITORIAL

THE HIATUS.

"There is no provision in the law under which medical students can be exempted or discharged."

Compiled Rulings of Provost Marshal General E. H. Crowder, Washington, D. C., July 30, 1917.

The combined intelligence of the Council of National Defense, the Medical Departments of the Military Services of the United States, medical educators, representatives of the medical service of foreign governments, and a common sense apprehension of the dangers of drafting medical students have so far failed to alter the ruling quoted above, or to qualify it in such a degree as to correct an obvious mistake in administrative enactment.

It is almost impossible to view the outlook calmly, for it will not be easy to undo the harm about to be consummated. The medical

student has been a veritable shuttlecock in the game. At first solicited and stimulated to join the officers' training camps or other preferred services, he was abruptly ordered to remain at his studies as a patriotic duty. Now he is drafted as other youths of his age, with the direct information that he may have no preference of service in the medical division of the army, but must go where and as assigned.

At this writing there would seem to be no recourse and the constituted authorities are apparently not inclined to make any concessions.

It is true that the first demand on medical students as part of the first contingent of the National Army will affect only a part of the student body *directly,* probably then not more than thirty or forty per cent. It is certain, however, that the balance of the student body will be seriously disturbed if not disorganized.

They are faced with the condition of a later draft and a forced interruption of their medical studies and this naturally occasions the deliberation as to the futility of commencing such a career. The alternative has already been adopted by quite a number of medical students and more will follow as the opportunity is afforded to enroll in the officers' training camps.

To medical schools richly endowed or liberally supported by state allowances, a smaller number of students will have no serious effect upon the administration. It will be otherwise with those schools more or less dependent upon the student attendance. Professors cannot be paid without revenue and laboratories need money for their efficient conduct.

It is perfectly logical to argue that a few medical schools may be sufficient to take care of the students who may survive, but what of the faculties of the other schools which may be forced out of operation?

There is another side, and more important, which has not been emphasized as forcibly as it should be.

The need of medical officers for the Army and Navy will probably total some 30,000 men or something like twenty-five per cent of the existing medical profession.

It is now estimated that the profession in the United States is inadequate for the civil population, including the hospitals; with twenty-five per cent reduction there will be just that much more deficiency.

With a sixty per cent reduction (at least) in medical student attendance at medical schools, it must be figured that for the next six years the annual output of physicians will be as 1500 compared with nearly 4000 now.

It will require more than six years to re-adjust the deficiency, for as it is the study of medicine is less and less attractive to the young man who realizes the outlay in time and in money for the preparation before he can begin to make a living. It will require extraordinary means to bring enough medical students back to the schools in order to make up the ranks of those who have suffered the experience of war.

Meantime many medical schools must cease to operate thru lack of students and of support. They may not reopen.

In the rigid enforcement of a draft in which the exception of medical students is not made it must be calculated that there will be a hiatus of four to seven years during which the whole United States must suffer thru an inadequate supply of doctors. It is not too late to remedy the growing mistake, and it will require no historian to record the distress and its occasion if the mistake is not corrected.

NOBLESSE OBLIGE.

Already there are signs of the evil days of war. Glory awaits the physician who is patriot enough to respond to the country's call for his service. An honorable detail lies before him and hereafter he will be proud of the memory of the work for righteousness and the future will accord him a place in the history of this time.

But all of this does not protect the industry he has established at home, after years of study and more years, perhaps, of labor. His household gods have been well fostered and he leaves them for the sake of honor. Who will protect them against the time of his return?

This question comes to all who are going to the front. There are few physicians who can, when the war ends, begin anew and hope to reach their present state in a short time.

It is the business of those who must and who choose to stay at home to see that the practice of those who go is saved.

There will be some of the conscienceless who may seek to advantage themselves of the opportunity afforded by the departure

of a successful practitioner, but here lies the duty of state defense and parish organization. The men of each community should report the absence on duty of any medical men in the locality or in the Parish to the local Chairman of the Auxiliary Committee on National Defense, or to the Parish Society. Newcomers to the community should be likewise reported.

The profession in some states already has undertaken the protection of the interest of the men who go.

If groups of practitioners everywhere will agree to take charge of the patients of the absent profession, keeping accurate accounts of the business and banking the returns for safety's sake, an adjustment of interest can be arranged duly. Such proceeding would create a proper estimate of the morality of the profession in the minds of the laity. If the patient of a doctor absent on military duty knows he will be cared for as that doctor's patient, he will spread the gospel of *"Noblesse oblige."*

PROHIBITION AND PATENT MEDICINES.

The daily press informs us that a campaign against the publication of misleading advertisements of patent medicines has been inaugurated by Dr. Dowling, President of the Louisiana State Board of Health. The advertising and marketing of such of those medicines as are deemed fraudulent will be controlled thru an arrangement between the State Board and various business organizations, druggists, etc. This campaign should receive the aid of the profession and is likely to meet with success if carried on with determination. We shall be glad to aid in any way that we may think possible or that may be suggested to us.

Somewhat in line with this and of equal importance would be the control of patent medicines containing large proportions of alcohol. Now that the prohibition of the use of alcohol has attained war time proportions, it would seem necessary to include in the movement all so called medical preparations containing more than a given percentage of alcohol, as, otherwise, it can be readily understood that the object of the law would be defeated to a great extent and that an extraordinary stimulus to the sale of vile and dangerous nostrums would follow.

Our State Health authorities would do a creditable and useful act by leading in the movement referred to above and in seeking to obtain national co-operation.

ORIGINAL ARTICLES

(No paper published or to be published in any other medical journal will be accepted for this department. All papers must be in the hands of the Editors on the tenth day of the month preceding that in which they are expected to appear. Reprints may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

HEMATURIA: ITS CLINICAL SIGNIFICANCE.*

By H. W. E. WALTHER, M. D., New Orleans.

The voiding of bloody urine is a condition which not infrequently brings a patient to the physician seeking relief. That physicians as well as patients have been prone to disregard the seriousness of this symptom in the past is daily demonstrated in our urological clinics and in the private records of genito-urinary surgeons. That hematuria frequently occurs and persists over a period of months, and in some instances years, without concomitant subjective symptoms, undoubtedly accounts for the fact that patients often delay seeking surgical aid until the diseased condition causing the hematuria has advanced to such a stage as to be beyond remedy. I say *surgical aid* because, in the vast majority of these cases, relief can only be obtained from surgical intervention.

The custom, so prevalent, of the attending physician administering drugs, either by mouth or locally, for a symptom-complex, of the etiology of which he is ignorant, is a practice which cannot be too severely condemned. Exceptional instances may arise where first aid may be rendered, as in cases where the attendant fears that the immediate hemorrhage might prove fatal. By putting these patients to bed and administering sedatives, many of these hematurias will check, at least temporarily. Then—and the sooner the better—a careful study of the case should be made to establish the exact origin and the cause of the blood. If the attending physician is not properly equipped to do this work he should call in some one who can.

The fact must ever be borne in mind that, in a high percentage of cases, hematuria is the first and only symptom of malignancy somewhere along the urogenital tract. Like many other truisms, in medicine this fact should be shouted from the housetops. The laity as well as the medical profession should be apprised of this

*Read at the 38th Annual Meeting, Louisiana State Medical Society, Alexandria, La., April 17, 18, 19, 1917.

fact. For years we have been taught that profuse and persistent hemorrhage from the uterus is a dangerous symptom to ignore; that a tumor in the breast should always be promptly removed. Then, why temporize with so serious a symptom of derangement in the genito-urinary tract when it, too, may mean malignancy?

That one occasionally meets with a case of so-called essential hematuria, in which no definite demonstrable cause for the bleeding can be found, should not deter us from giving every case the benefit of a doubt and insist that a thorough urological examination be made and every effort exerted to find the origin and causation of the blood.

Whereas formerly it was no easy matter for one to determine definitely the origin of the hemorrhage with any degree of accuracy, to-day, with the aid of modern diagnostic instruments, we can locate the source of the bleeding, and, with few exceptions, determine the cause. When we consider that hematuria may mean a lesion in either the urethra, prostate, seminal vesicles, bladder, ureters or kidneys, it should be obvious that something more refined than the "glass tests" or a urinalysis alone is required. Not that urinalysis is valueless, for, unless it is performed in a routine manner and specimens of centrifugalized sediment are examined microscopically, one may fall into error. Hemoglobinuria may be the cause of the red-tinged urine; in some instances this color is due to the ingestion of such drugs as senna, rhubarb or sulphonal.

The urethroscope, the cystoscope and the ureteral catheter are the diagnostic aids which enable the urologist to locate the source of the trouble. It is not possible, however, in every case, to arrive at a definite conclusion from a single cystoscopy. It will often require repeated cystoscopic examinations to locate the source of the blood.

Hematuria is encountered most frequently in cases of tumor, calculus, tuberculosis or infection (non-tubercular) somewhere along the genito-urinary tract. Trauma to any portion of this tract also frequently results in the voiding of bloody urine. While the initial symptom of nephritis is occasionally claimed to be bloody urine, I have not personally observed any of these cases. Malarial hematurias have been reported in the literature, but their authenticity has been questioned. It is quite probable that some of these cases were malarial hemoglobinurias. The terminal hematuria of acute posterior urethritis is so common and is usually so easily

recognized that it will not be considered here further than to mention same.

From my personal records I have been able to collect seventy-eight cases of hematuria which have come under my observation. As it should be of some interest to record the various conditions which caused the bleeding, as well as the location of the various lesions, I have made the following tabulation:

	No. of Cases.		No. of Cases.
Carcinoma of bladder	19	Chronic spermatocystitis	2
Benign papilloma of bladder	7	Urethral calculus	2
Carcinoma of prostate	7	Bladder varix	1
Renal tuberculosis	5	Neisserian cystitis	1
Ureteral calculus	4	Renal cyst	1
Bladder calculus	4	Edema bullosum of bladder	1
Essential hematuria	4	Ruptured bladder	1
Pyonephrosis	3	Urethral ulcers	1
Renal calculus	3		—
Chronic cystitis	3		74
Benign papilloma of urethra	3	Diagnosis undetermined	4
Hematuria of pregnancy	2		—
			78

As will be noted in the tabulation, no positive diagnosis was made in four of the cases, due to the fact that the patients refused instrumental examinations. This leaves seventy-four cases to be analyzed.

Tumors of the genito-urinary tract were the most frequent cause of hematuria, occurring thirty-six times, or in 51 per cent of cases. Of these tumors, nineteen were carcinoma of the bladder, seven were benign papilloma of the bladder, seven were carcinoma of the prostate, and three were benign papilloma of the urethra.

Urinary calculi were second in point of frequency, occurring thirteen times, or in 19 per cent of cases. They were divided as follows: Renal calculi, three cases; ureteral calculi, four cases; bladder calculi, four cases, and urethral calculi, two cases.

The next most frequent lesion was renal tuberculosis, being present five times, or in about 7 per cent of cases.

There were four cases of so-called essential hematuria. This is a condition in which bleeding occurs from one or the other kidney (rarely from both synchronously) and where no other pathology can be demonstrated, either by cystoscopy, microscopy or Rœntgenography, other than the presence of red blood cells in the urine. To such cases the term "essential hematuria" has been given. We

might as well acknowledge our diagnostic limitations. The etiology of this type of hematuria has not yet been determined.

In this series were three cases of pyonephrosis, two each of hematuria of pregnancy and chronic spermatocystitis, and one each of renal cyst, bladder varix, edema bullosum of bladder, gonorrheal cystitis, ruptured bladder, and urethral ulcerations.

Conclusions.

1. A study of seventy-four cases of hematuria demonstrates the marked prevalence of tumor of the genito-urinary tract, especially in its relation to malignancy. Of all these tumors, 72 per cent were cancer.

2. The frequent occurrence of symptomless hematuria, associated with urogenital malignancy, should impress upon all the importance of early cystoscopic examination, so as to exclude this possibility.

3. The seriousness of hematuria as a symptom, and the necessity of determining its cause, should be impressed upon each patient suffering with urinary hemorrhage.

Discussion on the Paper of Dr. Walther.

Dr. A. C. King, New Orleans: While Dr. Walther was reading his paper he made the diagnosis of a case I operated on eighteen years ago. That is a curious statement to make, but it is a fact. I have often wondered what is meant by the expression, "essential hematuria," and the doctor explained it very clearly. It seems it is one of the conditions we have to meet with occasionally, and the case I have reference to was an Italian woman, who had hemorrhage after hemorrhage, not of a violent type, but it just kept on recurring. That was before the days of the specialist in genito-urinary work, or rather before they had acquired the skill which they possess in this day and time, and the only way to make that diagnosis was to guess at it. We guessed it was necessary to remove the kidney of this patient. She complained of a good deal of pain on the right side, and I suspected kidney-stone, or, at least, ureteral stone. She had had at that time four or five children, so we got busy and removed the right kidney. We cut down on the kidney, expecting to find a pelvic stone, or something that would lead us to make a respectable diagnosis. We found nothing, but we removed the right kidney, and the kidney was perfectly good. As I have said, that woman had borne five children. Since then she has had no more hemorrhages and is perfectly well. I have often puzzled over that case, and I am pretty well sure it was one of these cases of essential hematuria. I do not know what else it was. Possibly I am correct in that, and possibly I am not. However, it has been puzzling to me up to this time, and I am obliged to Dr. Walther for helping me make the diagnosis.

Dr. Walther (closing): I thank Dr. King for his discussion. There is only one point I wish to bring out regarding essential hematuria,

namely: the genito-urinary man, who is supposed to be delving in nothing but kidneys and ureters, as far as the upper abdomen goes, should be able to tell more about the kidneys than the man who does everything. But, as I said in my paper, the genito-urinary man must acknowledge his limitations in certain matters, and essential hematuria comes at the top of the list. We may be able to confirm the diagnosis of the general practitioner at times; he may send us a case which he thinks is essential hematuria, but after we have gone over it we do not like to say that we can see no more than he does. There is not much satisfaction in that. We should be of aid to the general practitioner and of appreciable aid to the surgeon, so far as he can determine what to do. Nephrotomy, nephrectomy, or the more simple cystoscopic methods, lavaging the affected kidney with adrenalin chlorid, etc., and using intravenous injections of the various preparations of blood platelets, and so on, have availed us nothing in genito-urinary work. Nephrectomy, at times, is a life-saving measure for these cases, but is it good surgery? Last week a prominent surgeon called me in consultation to see a case of hematuria, the man having bled for two years. He had a hemoglobin of 30 per cent, had lost forty pounds in the last six months, and had to be carried into the hospital. What is to be done in a case like that? This kidney was split from pole to pole, and a healthier kidney you never saw. The kidney was taken out and pronounced by the pathologist chronic infective nephritis. The other kidney was all right, so far as the phthalein test and the urine urea were concerned. It might have been a life-saving measure in this case, but oftentimes we will get cases where simply splitting the kidney from pole to pole and mattressing it with sutures will stop hemorrhage once and for all. Where we have a case under observation, and can do that, is it not better, in some instances, to split the kidney from pole to pole, put in mattress sutures, close, and put it back and see what happens? It can be taken out at a subsequent date if necessary.

The main point of my paper concerned malignancy of the genito-urinary tract and its relation to hematuria. Bloody urine is a serious problem. A great many of you may know it, but to those who do not know it I would like to say, as emphatically as I can, **that blood in the urine is a dangerous thing.** We read medical journals in which Bloodgood, of Baltimore, and others are preaching for us to get cancer early and do something for our patients. If you want to keep patients out of the grave, get to the bottom of the hematuria. Do not give them something internally or intravenously to stop bleeding. These bleedings or hemorrhages frequently stop of their own accord. Sometimes you give an injection of something and the hemorrhage stops, and if you did not give the injection the hemorrhage would have stopped anyway.

I saw a man three years ago, in a small town in Louisiana, who had been urinating blood for fifteen years; he had been under the observation of doctors and not one physician had recommended the use of the cystoscope. He came to the Charity Hospital genito-urinary service with an inoperable carcinoma involving the entire bladder. What was the condition fifteen years ago? It might have been at that time an innocent or benign papilloma of the bladder, which could have been destroyed in three or five minutes with the high frequency spark, never to return. We have some of these cases under our observation five years, and they have not returned. These things are potentially malignant and kill men.

GUNSHOT WOUNDS OF THE EXTREMITIES.*

By J. C. WILLIS, M. D., and A. B. NELSON, M. D., Shreveport.

In consideration of the subject of gunshot wounds of the extremities, we deem it necessary to deal only with the wounds inflicted by such instruments as we have to deal with, and not so much from the standpoint of the army surgeon, because most of us do general practice; so that we shall consider wounds inflicted by the rifle, shotgun, pistol and toy pistol.

In the extremity a gunshot wound may involve only the soft tissue, or it may involve both soft tissue and bone. The entrance wound of a bullet is usually smaller and more clean-cut than the exit wound. It may be umbilicated or inverted, while the other is lacerated and more or less everted. Wounds of the soft tissue may show perforations in the tendons and the fascia. The tendon, however, may be cut across if the bullet should strike it from the side.

Nerves may be severed in the same way as the tendon. Nerve lesions are divided into: first, concussion; second, contusion; third, partial division; and, fourth, complete division. Concussion results from the vibratory effects of projectiles, or particles of bone which become secondary missiles from the force of the bullet. Complete loss of function, both motor and sensory, may be the result of concussion on an individual nerve; even muscular atrophy may result to some extent. There may be, however, only slight anesthesia of the parts supplied by the nerve.

In a contusion, real injury has been done the nerve and it is more serious. The loss of motion and sensation is not complete. Trophic changes appear, such as redness of the skin, loss of hair, pain in the form of neuritis, and, maybe, club-nails and polished skin. In partial division of the nerve we have the same symptom complex, as in contusion. Complete division of the nerve usually occurs in the smaller nerves of the parts; a larger nerve is rarely severed completely. Here, we have complete loss of motion and sensation, at once, and lasting indefinitely. Of course, trophic changes take place and persist.

With the former large lead bullet, the blood vessels seem to escape miraculously, but with the steel-jacket bullet, which cuts its way more or less, the small vessels may be severed entirely, the larger ones button-holed or perforated. We may have, as the result

*Read at the 38th Annual Meeting, Louisiana State Medical Society, Alexandria, La., April 17, 18, 19, 1917.

of the wounding of a vessel, a severe external hemorrhage, a traumatic aneurysm, or a concealed hemorrhage. The latter is caused by the change in the position of the fascia and muscle, after the perforation has been made and the obstruction to the external flow of the blood is brought about. Of course, if the circulation is sufficiently interfered with, pulsation in the distribution of the vessel is lost, and gangrene will supervene.

The injury from a shot-gun wound is dependent upon the size of the shot and the distance from the object. Buckshot might be classified as just so many bullets; a smaller shot, if some distance away, will not do very much damage to the extremities. However, if at close range, we may have an ugly lacerated wound containing wads, parts of clothing, blood clots, shot, and fragments of bone, as well as soft tissue, especially muscle.

Toy pistol wounds, as a rule, are inflicted upon the extremities of children. The development of tetanus in these cases is common, due to the fact that children, when wounded in this way are usually playing in the streets, where their hands are already contaminated.

The damage done to a bone by a bullet is dependent upon the velocity of the bullet, and the density of the bone. Hence, the diaphysis of the long bone struck by a bullet going at a high rate of speed produces the greatest possible amount of damage that can be done to a bone by a bullet. The momentum of the bullet is given off to the particles of bone shattered from the shaft, and they become secondary missiles contusing, and lacerating the soft tissue at the exit. So much damage has been done in this way to the soft tissue that it was thought that dum-dum bullets were being used, when it was only the ordinary bullet. If the force of the bullet is practically spent, it may only break the bone and the bullet will lodge. Fractures from gun-shot wounds, however, are rarely transverse, but usually comminuted fractures.

In the spongy portion of the bone near the joints, the wound in the bone may be merely a round hole through the bone, or it may split the bone up the shaft some distance. These wounds are not so serious, due to the fact that the resistance to the bullet is not so great. Sections of the bone may be shot away by a shot-gun at close range, even the entire extremities may be mangled.

Joint Wounds: The vibratory effect on a joint seems to be similar to that of a nerve, when a bullet passes through the neighboring tissues, and the condition is known as vibration synovitis.

A bullet may enter the joint and lodge there, or it may pass entirely through the joint, perforating the articular end. However, damage may be done to the soft tissue only about the joint, as a perforation, or a tear in the capsule of the knee. Comminution occurs when the wound is received at short range, either from a shot-gun or from a high powered rifle, at which time the soft tissue and the bone suffer great destruction. The most positive sign of a joint injury is the escape of synovial fluid. Fissures from an adjoining fracture may extend into the joint, as might occur in any other fracture, and joint in that way, become infected.

The sensation on receiving a gun-shot wound is not that of pain so much as it is a blow followed by a burning or a stinging sensation, occasionally, there is more or less anesthesia, and the patient is not sensible of having been shot until he or someone else sees the blood. If pain be present, it is usually at the point of exit. It is sometimes referred to at a point remote from the seat of injury.

In a gun-shot injury of any consequence, the shock is marked. It may be very alarming in fractures when much comminution has taken place, or in shot-gun wounds inflicted at close range. The symptoms of shock are the same as from any other cause, as a rule. Instead of the mental apathy usually accompanying shock, there may be, however, great excitement. This is thought to be due to the state of the patient's mind at the time he received the injury.

Treatment.

In the treatment of gun-shot wounds of the extremity, we have to consider; first, the life of the patient; second, the loss of the limb; and third, the function of the limb. In the beginning, the treatment should be directed toward the management of shock, the arrest of hemorrhage, and the prevention of infection.

Shock: The following cardinal points should be kept in mind when dealing with a case of shock: the patient should be carefully watched for a recurrent hemorrhage, which is prone to take place as soon as the blood pressure is re-established; second, if the temperature falls to about 96 8/10 degrees F., the prognosis is grave; third, the thermometer should be the guide for the proper time to operate. All wounded who fail to recover their temperature in about four hours, should be considered among the seriously wounded, and unfit for immediate operation. Fourth, no operation is permissible in a state of shock, except the ligation of vessels to control the hemorrhage. The measure for the relief of shock

in these cases are the same as in shock from other cause, and are too well known for me to mention.

External primary hemorrhage, when alarming should be controlled at once by ligation, if practical, and if not, by clamping the vessel or by tourniquet. The clamp may remain until permanent ligation can be done, or until the second dressing is made; but the tourniquet should be removed within four hours, if at all possible. Intermediate hemorrhage is the result of the removal of a blood clot, or the giving way of the remaining wall of a blood vessel, or the increase of the blood pressure after shock, and should be dealt with as above described. Secondary hemorrhage rarely occurs in this day of modern surgery; the treatment of which is prophylactic. Ligation will be necessary, however, should it occur.

Suturing of the larger blood vessels may be practiced, provided not too much of the vessel is shot away, and provided we are reasonably sure that infection will not occur.

Diffuse traumatic aneurysm when demanding operative treatment, should be opened up and the clots turned out, and vessel ligated. If necessary, the vessel may be ligated on the proximal side of the tumor but some distance from the tumor. The circumscribed variety may be successfully treated by rest in bed. However, if they progress, it may be necessary to open the tumor, ligate on both sides of the sac, and dissect out the sac.

Von Nussbaum aptly said, "The fate of the wounded rests in the hands of the one who applies the first dressing." The gun-shot wound of today is more or less contaminated, depending on the nature of treatment, but usually less. In the vast majority of cases the local reaction will be able to take care of the infection, provided we do not contaminate the wound worse. It is true that from the nature of some wounds they form a perfect pabulum for the development of bacteria, because of their lacerated, contused condition. The anaërobic bacteria and especially tetanus and gas bacilli, thrive under such conditions. The treatment of these is entirely prophylactic when possible. The immunizing dose of the anti-tetanic serum, as well as its value, is too well known for me to discuss. A combination of antitoxin and salvarsan has been recently recommended for tetanus. In cases of gas bacillus infection, free drainage, that is free incisions in the part down to the muscles, free use of hydrogen peroxide and wet dressing or irrigations of permanganate of potassium should be energetically applied. All

ragged lacerated wounds should be cleaned out thoroughly under anesthesia, as soon as possible. By this, I mean to remove all wads, pieces of clothing, particles of bone, shot, blood clots, and all fragments of muscle tissue which are dead or which are liable to die.

Kenneth Taylor reports* a series of experiments, the results of which I must mention as follows;

First: The implantation of a sterile foreign body or a small piece of sterile dead muscle alone, produced no micropic lesion.

Second: The implantation of a foreign body infected with tetanus bacilli, *Staphylococcus aureus, B. aërogenes capsulatus* or streptococci, produced usually a localized abscess formation without invading the surrounding normal tissues.

Third: The addition of a small portion of dead muscle tissue in the region of the infection produced a more rapid and diffused inflammatory process, with earlier and more extensive abscess formation than the wounds containing only bacteria or those containing infected cloth.

Fourth: The implantation of infected cloth, together with muscle tissue produced a more active and destructive lesion than the implantation of either alone. When infected with tetanus bacilli, the presence of dead muscle fragments determined a high mortality.

Fifth: Of the two substances, cloth and devitalized muscle, in the presence of infection, the muscle produced the more active infective process.

Conclusion: The result of these experiments suggests that in the cleaning of fresh wounds at least as great care should be exercised to remove separated and divitalized fragments of soft tissue, as is taken to remove other foreign bodies.

Following such cleaning the very best procedure would be Carrel's Method of Irrigation with Dakin's Solution. This method must be carried out in detail to get the best results. (See *Southern Medical Journal.* December number.)

If in exploring a wound, we find a nerve severed, it would be better to suture the same. However, we are not justified in making an incision simply to investigate the condition of the nerve in a fresh gun-shot wound where considerable other damage has been done. If, however, there seems to be no improvement in the

*Annals of Surgery. December, 1916. P. 641.

condition of the nerve at the end of one month, it may be necessary to examine this nerve, and if needed approximate the ends, or such part of the nerve as may be found and sutured. An anastomisis may be necessary in case of too great a portion of the nerve being gone. Cicatrix of soft tissue or callus from bone may include a nerve and freeing of the nerve be necessary. In case this is done, don't place the nerve in contact with same mass from which it has been removed, but place a flap of fascia and fat under the nerve and transplant it.

In an injury to the joint, fix the limb in such position that it will be most useful in case of ankylosis. Should hemorrhage take place in the joint, it should be drawn away by aspirating needle and under the strictest aseptic conditions. It may be necessary to resect the joint surfaces, or even amputate the limb.

In gun-shot fractures of the long bones where the probability of infection is not too great, the limb should be treated as in a closed fracture. The treatment of these fractures does not depend so much on whether or not they are comminuted, but upon whether or not they are infected. I have treated a number of compound fractures, not all of which were gun-shot wounds, but involving the same principles, and unless the damage to the soft tissue is too great we put them up in plaster with iodine and dressing with iodoform gauze to take care of any infection that might develop from the wound drainage, and in many of these cases we get union as in-closed fractures. In all operations done on bones, our dressing consists of iodoform gauze. The patient in the gun-shot fracture should be watched very closely and if any symptoms of septic trouble should arise, the wound is dressed through the window in the cast. Should the infection grow to be too serious, it may be necessary to remove the cast and apply a fracture box, sand bags, or extension.

The point I wish to emphasize is that many of these compound fractures when properly treated and not over treated will heal like a simple fracture. One of the great advantages in the plaster cast over the sand bag, and Buck's extension, is that the patient is able to get out of bed earlier. There are conditions, however, under which it is not practical to use the plaster cast, and some of the other splints must be used. Among these splints may be mentioned those described by Groves of Bristol, Eng., in the *British Journal of Surgery*, April, 1915.

Discussion on The Paper of Dr. Willis and Dr. Nelson.

Dr. J. L. Adams, Monroe: I do not wish to discuss Dr. Nelson's paper except for two reasons, primarily for the selection of his subject, and secondly for the able and exhaustive manner in which he has treated the subject. This subject seems to be a message to the country doctor, and a message fraught with much significance for the country doctor. It does not concern the man so much who is living in a city where there are good hospital facilities as it does the man practicing in a small town and remote country district where there are no hospital facilities. Too often in arranging our program we do so to suit the men who are best prepared to take care of an emergency and it does not touch the man who is really in trouble.

I would like to relate a case showing how the country practitioner gets into trouble or has a hard proposition to contend with. Fifteen miles from any point of medical relief two boys were out hunting. They were about fifteen years of age. The boys came in from their hunting shortly after dark. When they came in they began to scuffle, when one of the guns discharged its contents and blew off one of the boy's shoulders so that there was nothing left but large vessels and skin hanging below. The shoulder was almost disarticulated. They were fifteen miles from any physician or any medical aid whatever. A messenger was hurried three miles and telegraphed for a doctor to come at once, that a boy was badly hurt. A doctor with only an emergency bag such as is carried by all country physicians rushed out to that place, winding around bad roads in the night and inaccessible avenues, six hours having elapsed from the time the boy was shot.

You can imagine yourself in that doctor's position. That boy could not be rushed to a hospital where assistance, nurses, antiseptic dressings, etc., were in readiness. The country doctor had no assistance, no nurse, and above all found the boy in a dying condition. In such a case it is not a question of saving the limb for functional purposes, but of saving life, and he is going to die if something is not done for him promptly. The country doctor, equal to emergency, brought all the resources at his command in treating that boy, and today he is a big husky fellow.

That is the kind of proposition the country doctor is up against not infrequently. The country doctor has to know a little of everything, consequently he does not know much of anything, so he is excusable if he does not do exactly as his fellow practitioner would do who is connected with a hospital. The country doctor has very little to work with as compared with the city doctor, so I would sound a note of warning to the program committee and let us have a program in the future which is most suitable and interesting to the country doctor.

Dr. K. Winfield Ney, New Orleans: The doctor's paper is interesting because it deals with gun-shot wounds of the extremities. So far as shock being associated with excitement is concerned, I have not observed shock in this form. I know that it does take place, but in France, after the strain of battle, when the men were brought to the casualty clearing station badly wounded, there was very little or no excitement attending shock and everything was usually quiet. One characteristic about these wounded men was they wanted to sleep. You could hardly arouse them. Insofar as the treatment of shock and hemorrhage is concerned, it is important to immediately look to the control of hem-

orrhage by some means or other, and the next thing is to replace the volume of blood that is lost if necessary. This is best accomplished by salt solution with adrenalin chlorid added. Adrenalin chlorid is almost as important as normal salt solution. Another thing important is to elevate the foot of the bed or rather to lower the head in shock and hemorrhage in order to get blood to the vital centers.

With regard to using a thermometer to determine the time to operate, it would be more satisfactory to use a blood pressure apparatus. If one has a low blood pressure, there is shock or hemorrhage, or the two combined. The best thing to do is to take the blood pressure, and if that is good, it is safe to operate.

A common opinion has always been held that the fate of a wound depends upon the first dressing. We do not believe that is so. The fact that these wounds are not made with sterile instruments, even though a bullet may be less septic, and the further fact that it goes through tissues that are not clean and carries pieces of clothing, are important considerations. When these bullets penetrate the tissues there is always much devitalization of the tissue in its path, and the modern bullet has an explosive effect when it strikes a bone. The bone is broken into fragments which partake of the velocity of the missile, and they penetrate the tissues in all directions and they open up many channels; destroy blood vessels; and produce devitalized tissue all the way through. Such cases can be treated successfully only by making a free incision, establishing thorough drainage, and using a correct antiseptic technic.

Dr. Williams M. Perkins, New Orleans: I want to speak of the value of iodin in connection with gun-shot wounds. I have been using and depending upon iodin for a great many years in the treatment of wounds. I have had many battles with my brother practitioners over it, some of them claiming that iodin is not useful except when applied to the skin. My personal experience with iodin goes back to 1899 or 1900. The question has often been raised that no antiseptic will be of value in destroying bacteria which does not do damage to the tissues. However that may be, we know that a strong tincture of iodin is not very healthy for bacteria and you have no difficulty in taking a scalp wound to demonstrate it. If you mop out the wound with ordinary tincture of iodin, dry it with dry gauze, suture it, you will get union by first intention. What little damage may be done to the tissues by the iodin is not sufficient to prevent union by first intention. If it does not sufficiently prevent the actual life of bacteria, it certainly impairs their ability to reproduce their kind. They do not seem to flourish and colonies do not grow very well in the presence of iodin. This can be clearly and easily demonstrated.

We are told by some writers that in the particular forms of infection of ugly wounds reported from the European battle-fields where the soil is supercharged with malignant forms of bacteria, that iodin has proven to be a very useful agent, but they sometimes change from iodin to chlorin. Some of the reports regarding chlorin state that it is highly efficient as an antiseptic.

The Carrel technic, I understand, consists in making a very free incision rather than relying on mere choice of antiseptics.

Dr. E. Denegre Martin, New Orleans: I think the great trouble with most of us is that we are always on the lookout for an elaborate technic in connection with any operation, and that is especially true with the

experienced man. He looks for his experience from some medical journal. He reads an elaborate report of what some man is doing and he tries to report something new. In fact, we all try to report something new, but there is nothing new under the sun. We are always looking for the big things and neglecting the little ones.

We see in our office on an average ten wounds a day. We do surgical work for five railroad companies and I do not know how many other companies. When an employee presents himself with a wound of an arm or a leg, it is bathed with a solution of benzine and iodin. It is washed with it. If a man cannot stand this procedure we anesthetize him and wash the raw surfaces as well as the skin, and cover with iodin, and 90 per cent. of such wounds heal primarily. I have seen men with injuries in which the tendons were exposed, but that is nothing new. We are treating such cases daily, and that is what your practitioners in the country ought to do. If you want first aid, make every patient you treat in the country keep a bottle of iodin, one bottle for the horse, and one bottle for the child. I do not care what one says about the value of iodin in doing this or that, I know it is of great value, and the proof of the pudding is in the eating. I would suggest to the country doctors that they urge every patient in the country to buy a bottle of iodin, and whenever they are wounded, pour the iodin on the wound.

In the treatment of shock, if you have no infusion apparatus, start the Murphy drip right away. You are much safer with the Murphy drip than with salt infusion. Patients do not die immediately of hemorrhage from a small vessel; they bleed until there is not enough force behind the heart to make them bleed and the vessels become blocked. In such cases start in with your infusion or with the Murphy drip and you will soon be rewarded. Do not expect immediate action.

I was called to see the wife of a physician who had absolutely lost his head. She had a postpartum hemorrhage. Instead of having her feet up, he had her head up. She was given a quart of hot water by rectum and her pulse came back. It saved her life.

Another case I had was one of ruptured extrauterine pregnancy. The woman was almost pulseless; I could not touch her. I did not infuse that woman for it would have meant death. I did not operate on her; I let her alone. I resorted to the Murphy drip, and the next morning I could feel the pulse. I operated on her, made an incision rapidly, opened up the belly, caught the bleeding vessel, started infusion, and she is living, and is the mother of six children. The country doctor, let me tell you, has experience and judgment, and all he wants is iodin.

Dr. P. B. Salatich, New Orleans: As I understand, Dr. Carrel uses a continuous solution. If we use a weak solution of iodin proportionate to the salt solution, we would accomplish as good results, and iodin is more highly antiseptic than saline.

Another thing I have observed in connection with these cases of compound fracture, is that if you keep the patient in bed a long while the wounds will not heal, you cannot get union. There may be some interposition of tissue between the fragments. In making a fenestrated splint, if you take four pieces of heavy iron and bend them in this way (demonstration) and apply a cast above and below the wound, you can get a good splint and the patient can get out of bed and walk about assisted by crutches, and after a while there is stimulation of granulation tissues and bone formation, and whatever necrotic material you

have you can curet away. I remember having curetted one case twenty times before there was healing of the fracture.

That can be done in the country as well as in the city.

Dr. Joseph A. Danna, New Orleans: We hear so much about gas bacillus infection that the relation of a case may be interesting. This was a case in which I used the two stage principle and I think thereby saved the patient's life. I also used local anesthesia in the case which undoubtedly contributed to the saving of his life. This boy was shot by a lady next door, as he was entering the house of a friend. He was shot about two inches below the knee. He did very well for four days, then complained of pain. I examined him thoroughly and I could find no particular trouble. There was no swelling that I could make out, and the last time I looked at his leg was early in the forenoon of the fourth or fifth day after he was shot. The next day I did not see him until 4 o'clock. The nurse told me he had blisters on his instep and was complaining and was not looking so well. When I saw him he was in a very bad condition physically; his pulse was rather rapid; he looked dreadfully shocked. I looked at his leg and his foot showed signs of gangrene. I cut the dressing off and the limb was gangrenous up to a point just below the knee; there was a great deal of crepitation in the limb and the thigh above. Externally crepitation reached up to the crest of the ilium. I saw something must be done immediately. I made a circular incision in the lower third of the thigh, feeling the infection had not traveled so far as the gas had. Externally I removed a quadrilateral flap extending up about five inches farther than the rest of the limb; I made a circular cut right straight down, including the bone and sawed off the bone. After infiltrating the skin first, and then catching the nerves as I got to them, I infiltrated them, catching the vessels and so forth. In this case, I am sure if I had tried to finish the job, I would have done two things; I might have enclosed the infection, and the additional shock of trying to do a finished operation would probably have caused him to succumb at the time. I packed the open tissues with loose gauze and used a continuous eusol drip on him. After about two weeks I did the final stump trimming operation, and he is alive today to tell the tale.

Dr. Nelson (closing): I do not believe there is anything else I have to say except to thank these gentlemen for their free discussion.

I want to say in reference to the remarks of Dr. Salatich that I have used the splint of which he speaks twice in compound fractures and found it satisfactory. The plaster-of-Paris is applied so that it extends above and below the wound, including the ends of the splint as he says, and it is a splendid splint. After its application the patient can get out of bed.

I intentionally did not mention shock because I wanted to finish the reading of my paper. Shock has been discussed a great deal from time to time, and we do not know very much about it after all, so I intentionally did not mention it. I think as much of iodin as Dr. Perkins does. The reason I use iodoform gauze is that it prevents the development of bacteria about the wound.

NOTES ON THE TREATMENT OF BLACKWATER FEVER.*

By THOMAS E. WRIGHT, M. D., Monroe, La.

There is no phase of malaria that has been so generally discussed as the subject of this paper, and the chief features of the discussion appear to hinge about the question, "Shall we or shall we not administer quinin in this type of malaria."

Quoting some of the leading authorities: Mannaberg advises that quinin be used only in the presence of parasites demonstable in the blood, and a history of previous quinin administration without any hemolytic action on the blood. Bastianelli concurs fully in the Mannaberg recommendation; this is also largely endorsed by Thayer and Vedy. Vedy says if it is impossible to make a microscopical examination of the blood, quinin should not be administered. Deaderick says, when the parasites persist after forty-eight hours following the onset, quinin should be administered; Deaderick also recommends its use in the intermittent type.

It will be noted from these that great stress is laid upon the use of the microscope to determine the presence of the parasites, which, when absent from the circulating blood, act as a bar to the use of quinin.

A careful study of the impression held by these and other malarial men leads us to believe that quinin is often responsible in some way for that group of symptoms termed blackwater fever. It might be classed as rank heresy for us to question seriously this attitude towards quinin. I acknowledge my heresy and frankly admit that I do question just how often quinin has ever produced hemoglobinuria except in rare cases of idiosyncracy. I trust this feature of the paper will be taken up fully in the discussion.

It is also interesting to review that long list of drugs and measures used in the treatment of this disease.

Vincent strongly urges the use of calcium chlorid four to six grams daily, also some by needle.

Polli advocates his hyposulphite of soda.

Lewis uses, and very sensibly so, hypodermoclysis of normal salt which he believes acts favorably in the prevention of anuria.

Methylene blue is a kidney irritant and yet it once had its strong advocates; salicylic acid is extremely bad on the stomach, and yet it is often recommended.

*Read at the 38th Annual Meeting, Louisiana State Medical Society, Alexandria, La., April 17, 18, 19, 1917.

Gallic acid, tannic acid, and ergot given on the basis that a hemorrhage is being dealt with, are considered ludicrous.

Quennec's chloroform theory as well as the advocates for ether are no longer considered seriously.

Hearsey recommends bicarbonate of soda and liquor hydrargyri perchlorid, which is quite similar to Sternberg's yellow fever treatment. However, the amount of alkali administered here is rather small.

Deaderick, in his excellent new text says, "Probably the most important indication in the treatment is the prevention of suppression."

It is too well known here to discuss at length that anuria may be produced by an acute poisioning of chemicals or drugs such as lead, phosphorus, and turpentine; also it is well known that certain toxins may produce anuria in that they lead so often to the development of acute Bright's. Osler mentions fevers and inflammations in the group of causes of anuria.

The causes of death from blackwater fever are chiefly three; suppression of urine heading the list, exhaustion, and cardiac paralysis.

In the group of symptoms of this particular disease we find one particular symptom which, if properly interpreted, might suggest to us the existence of a condition which in the main might become, and I believe does become, one chief source of danger to the patient. If this interpretion is correct we find an indication for a type of treatment that should receive careful consideration at our hands. Every doctor who has treated patients of this kind knows only too well the horrible retching and vomiting which obtain in nearly every case. I do not recall a single case I have seen wherein this was not true. This vomiting interferes seriously with the administration of food, water, and the medicine; and the weakness and prostration are at least considerably influenced by it. If we recall cases of very severe acidosis and compare this vomiting above outlined, together with the odor nearly always found on the breath, even in the absence of tests for acetone and diacetic acid, we are struck by the extreme similarity.

Might we not then administer a type of treatment only too well known by all present for acidosis, and note our results. Is it not more than probable that in blackwater fever we are dealing with an acid intoxication manifesting itself by vomiting, etc. It

is understood, of course, that the process going on in the blood that is responsible for the disease is simply that of hemolysis due to toxins for which the parasites of malaria are responsible. If such a suggestive treatment is administered with entirely satisfactory results so far as concern the vomiting, and our patient is able to take food, water, and drugs, with a general improvement in his condition, might it not be rational to conclude that this acid intoxication has been at least partly neutralized?

Inasmuch as anuria, as mentioned above, may be produced by a high concentration of toxins within the blood, is it not also rational to conclude that by this method some protecting influence has been thrown about the kidney and the chance of recovery increased.

Case 1. Mrs. W. entered the hospital October 1, 1915, with all the usual signs of blackwater fever. After two days of retching during which time very little water, food, or medicine was retained by mouth; her condition becoming critical. At this stage an active anti-acidosis treatment was begun with a subsidence of vomiting and a consequent general improvement which soon lead to recovery. She was given quinin only after the vomiting was under control and improvement was evident. This patient left the hospital October 8.

Case 2. Henry P. entered the hospital October 21, 1915, and developed blackwater fever within thirty minutes after being registered. An active treatment as above outlined was immediately instituted. This patient was in the hospital fourteen days, and his case was classed as extremely severe, yet he vomited only twice during his time in the hospital. One time was due to an indigestion, having been given a glass of sweet milk with a temperature about 103. The other vomiting time came after the administration of quinin. Patient left the hospital November 4, 1915.

Case 3. Frank M. entered the hospital October 25, 1915, two days after the onset. This plan of treatment was carried out and the vomiting ceased in about twelve hours. Patient left the hospital November 5, 1915.

Case 4. Frank McQ. was seen one hour after the onset, July 10, 1916. The same plan of treatment was carried out with very little nausea, vomiting three times. After the symptoms had abated and the patient's general condition was satisfactory, he developed a cholecystitis with a fatal termination on July 26, 1916.

Very good results can be obtained by the following method: Murphy drip of glucose and bicarbonate of soda solution, repeated every 3 to 5 hours. Bicarbonate of soda, in rather strong solution is administered by mouth, it becomes the patient's drinking water, acids are withheld, and sweets encouraged. Small enemas occasionally of soda and glucose solution with efforts to have them retained may be used in place of the Murphy drip in patients not in

a hospital. In very severe and prostrated cases glucose and soda 2% of each may be administered intravenously; the results will be more immediate and entirely satisfactory.

The effect of this type of treatment on the hemolytic process going on in the blood does not appear to be appreciable except insofar as a line of resistance against the toxins may be more quickly established by the maintenance of strength through our protection of the stomach and the kidneys.

I have not touched upon the usual indications such as proper elimination, careful sustaining diet, judicious hydrotherapy, the occasional use of oxygen, proper stimulation, etc. I take it for granted that these usual procedures will be carried out.

As to quinin administration, whether a blood examination is made or not, I am inclined to let the individual case, with circumstances as they develop, rather dictate the use of quinin. I give quinin in these intravenously, ten grains in 20c.c. of saline, once or twice a day covering a period of several days, but after the general condition of the patient relative to vomiting etc., is more satisfactory.

R. W. Burkett in the London *Lancet* of November 20, 1915, recommends the intravenous administration of 2% sodium bicarbonate salt solution, following this later with intravenous quinin. This is in line with that suggested by Leonard Rogers in the treatment of cholera. This was brought to my attention by the late Dr. von Ezdorf who had access to the hospital charts of the patients above mentioned. It will be noted that Cases 1, 2, and 3 were treated before the publication of Burkett's article.

DISCUSSION ON THE PAPER OF DR. WRIGHT.

Dr. Leon J. Menville, Houma: According to the latest medical history, a doctor from Monroe in 1856 was the first physician in the United States to report a case of blackwater fever, and 60 years later we sit here and listen to an admirable paper presented to us by Dr. Wright.

In discussing the treatment of blackwater fever, like the treatment of any other disease, it is especially necessary that the pathology of the condition be thoroughly understood. However, it is not within my province to discuss the pathology of blackwater fever but rather the treatment of the disease. Dr. Wright has thoroughly gone over the subject and I want to compliment him on his efficient work in that line. It might be of interest to the profession to know that Dr. Wright has given particular study to malaria for some years and that he is an authority on the subject.

In looking over the literature and studying personal experience I

find that treatment centers more particularly around the kidney, the treatment which will produce free elimination will be productive of the most good. The idea of Dr. Wright concerning acidosis is a very good one, and the intravenous injections of bicarbonate of soda are excellent. When the heart needs care in these cases, you will see at once the necessity for giving digitalis. Most of the authorities advise not to use quinin during the attack except that if the malarial parasite should predominate in such numbers that the symptoms in part can be attributed to it, then quinin may be given, but it is better to wait until the attack has subsided, and then begin with small fractional doses. A writer in the **Southern Medical Journal** has advocated the quininless treatment of blackwater fever. He lays stress on magnesium sulphate as a specific. Whether it is or not, I do not know, but for those who have a great many of these cases, perhaps it would be wise for them to look up the literature.

A writer in the **Archives of Internal Medicine** has especially warned the profession against using quinin in an attack of blackwater fever. After having heard Dr. Wright's paper and knowing the excellent rerults he has obtained and his great interest in the subject, I feel pretty safe in using quinin as he does in the treatment of blackwater fever.

Dr. Foster M. Johns, New Orleans: I have heard a great many discussions on blackwater fever, and in every discussion I can remember the chief bone of contention was, shall we give quinin, or shall we not? The pros and cons are equally divided, and both reporting as successful or not as successful results. The subject has been regarded from another point of view aside from quinin as being the basic fundamental feature. One person may say that he can cure all of his cases with quinin or without it. Certainly, some other plan of treatment besides quinin treatment should be tried out.

I wish to congratulate Dr. Wright on his successful reports.

Dr. J. T. Abshire, Le Roy: I want to cite a case of ancient history. I want to carry you back to the year 1895 when this same identical subject was brought before the Louisiana State Medical Society, and if you youngsters think you know it all, I will say that you are just as far from having a successful treatment now as they were then, and the subject at that time was discussed by Dr. John B. Elliott, Sr. The same identical reasoning I am hearing today I heard then, and it was the consensus of opinion then, and Dr. Elliott recommended it strongly, that the only treatment was turpentine, and the man who read the article at that time reported as good results from the use of turpentine as Dr. Wright has done with his treatment today, showing that in internal medicine we have not progressed in some lines as we ought to have done. We have not progressed as much as they have in surgery.

I have myself in the last twenty-eight years of practice used quinin in every case of blackwater fever, and we had plenty of it in my parish in years gone by. I used and followed Dr. Elliott's treatment with turpentine with excellent results always, but once I had a case of anuria. When I got there I used everything I thought of, and the patient died just like Dr. Wright's case. You cannot save some of them. I am very sorry that no perceptible improvement has been made in the treatment of blackwater fever.

Dr. I. I. Lemann, New Orleans: In view of the technic of Bass and Johns in growing plasmodium in vitro in the presence of glucose, Dr.

Wright's suggestion of giving glucose intravenously to malarial patients is interesting. One would suppose **a priori** that glucose solutions intravenously would be contraindicated in malarial infection since the plasmodia grow better in vitro in the presence of glucose. One would suppose that diabetic patients with hyperglycemia would prove easy victims of malaria. I have had the opportunity to see true diabetic patients infected with plasmodium, and I had the privilege of placing at Dr. Bass' disposal some three or four years ago such a case from whose blood Dr. Bass was able to grow the plasmodium without the addition of glucose. Such a patient might be expected to be the easy victim of malaria, and we might expect malaria to play havoc with diabetics. Such is not the case.

It would be interesting to know from Dr. Wright, since he has the temerity to give glucose intravenously to malarial patients, what the effect is upon the parasites. I would like to know when he does not give quinin to these patients whether he finds the parasites seem to grow more quickly and whether the malarial manifestations are more acute on account of the intravenous glucose injections.

Dr. E. S. Fulton, Iberia: In the summer of 1906, as an under-graduate I went over into the St. Francis River Bottoms in Ark., got as far from the rail road as possible and started in to practice medicine.

I had only been practicing about two weeks and thought I was getting along fine, when I was called to see a case of blackwater fever. I had been taught in Memphis to give quinin in all malarial conditions so I ordered several big doses for the victim, stating to the family that I would call the following day. Before I got back the patient had taken his departure to that 'undiscovered country.' About ten days later I saw another case of the same nature and I filled him full of quinin with the same result as before and the conclusion was forced on me that there was something wrong with my treatment. The next case I saw, I said to the family: "This man is very sick, you better send for a doctor." (Laughter) They sent across the woods for an old fellow who had been practicing medicine in that vicinity for forty years, and so far as practical medicine goes, he had more than some of us ever will have. He came in, looked the patient over; he didn't ask any questions; he knew by his appearance what ailed him. We walked out of the house into the yard and the old man lit his pipe, leaned up against the fence and looking over at me said: "Waal, Doctor, I has these cases of 'malayal hemechoria' and I gives 'em calomel in teaspoonful doses and I cure 'em." Said I: "Put it to him then for what I have been doing has been killing them." He took his calomel bottle out of his old saddle-worn bags and filled a teaspoon with the drug and rounded it off nicely making, I should judge, about one hundred and eighty grains, and gave it to the patient. The man got well. (Laughter). I had five other cases during my stay in that locality, I followed the old gentleman's line of treatment and they are all living today.

So I would suggest especially to those of you who have to treat these cases outside of a hospital and in cabins along the banks of the creeks, that if you left your intravenous apparatus at home, or you have no glucose or bicarbonate solution, before you let the victims of blackwater fever die, for Heaven's sake, give them a big dose of calomel.

Dr. Allan Eustis, New Orleans: I want to thank Dr. Wright for his

paper. It has been of distinct benefit to me, encouraging me, I might say, in my work.

I have been harping, as you all know, on the question of acidosis and intestinal toxemia for many years. I have not had a great deal of experience with blackwater fever. When I was in Vermilion we did not have a great deal of it. Why, I do not know, but it has died out. Whether it is in the diet, or the patients are taking more calomel and so many cases are not seen, I do not know. I have had one acute case in the hospital which was relieved along the lines that Dr. Wright has outlined. Realizing that the kidneys were the fundamental cause of his symptoms at that time, and the patient was comatose, had been passing bloody urine, and his kidneys were completely blocked, we simply followed out the use of glucose and the alkali treatment as we have been doing for a number of years. That man recovered. He was given quinin after his kidneys started up.

We have hematuria in other toximias, to which Dr. Wright has called our attention, and just because we have malaria there is no reason why the kidneys are going to kill the patient.

I have had one other case of blackwater fever (Dr. Philips' uncle) with a history of having had hematuria for a year. I treated him on a prophylactic basis, the liver measuring 16 centimeters, treating the acidosis prophylactically, and while he has had his malaria he has not had his hematuria.

Dr. A. A. Herold, Shreveport: When Professor John B. Elliott, Sr., lectured on hematuria he used to bring the evidence of those who favored quinin and those who were against it, and closed his lecture with the advice to ask the most successful practitioner in a community what he would do in a case of hematuria. So when I started out to practice I went to the oldest practitioners in this line and said, do you give quinin or not to cure hematuria in malaria? And the unanimous verdict was not to give quinin until at least 24 hours after the subsidence of the symptoms. I followed that advice and the cases I have treated got well. These patients had been treated by purgatives before I saw them. The local physician would give them teaspoonful doses of calomel; the patients were thoroughly purged, followed by alkaline diuretics. Dr. Wright's paper is interesting and will prove instructive to us when we run across these important cases.

Dr. D. W. Kelly, Winnfield: Several years ago I was in a more malarial section of the country than I am now. I do not see the type of malaria now that I saw eight or nine years ago. With the type of malaria we see about the creek, I for one would take my chances in being treated by the fellow who uses calomel. I have had some experience with the severe types of malaria that we see in the woods, and I want to tell you right now that I believe in elimination. There is nothing better than normal salt solution, and you should eliminate every way you can. But, first of all, if I were to be treated, if I were to have a severe type of malarial hematuria, I would rather be treated by a practical man than to be treated in the best sanitarium by the most skilled man of any state in the country, because I believe that malarial hematuria is a disease we have got to learn a lot about. I have talked with Dr. John B. Elliott, Sr., and he seemed to take as much interest in asking me questions as I did in asking him. I certainly believe in elimination, and in cases of recurrent chills I always give quinin. When you

give quinin you want to give it intravenously or by the needle. When I was treating my cases of malarial hematuria, I treated them with Warburg's tincture.

Dr. J. L. Adams, Monroe: I do not feel that I can add anything to the able paper that has been presented by Dr. Wright. However, I feel it my duty to say something in connection with his paper in view of the fact that I have worked along with Dr. Wright and have been in close touch with his work. I congratulate him on his work along this line, and on this subject and especially the manner in which he has presented it; but, like Dr. Wright I am somewhat apologizing for the specific statements and position I took a year ago, and will probably apologize a little more later on relative to the intravenous use of quinin. Be that as it may, I have had some experience along that line of treating blackwater fever during the same course of time that Dr. Wright has treated it. Going on the theory that the capillaries about the congested portions contain practically all the plasmodia, the blood stream in common being free so far as we can determine during these attacks, I figure that by giving them intravenous infusions of saline plus five per cent. glucose we alter the blood pressure, change the line of circulation, and bring the plasmodia into the stream and the quinin would give the desired rsults. In that way relieving the pernicious vomiting and acidosis, by using glucose along with the alkali to stimulate the kidneys, we would obviate the suppression that usually followed. I would give the patient early in the forenoon a dose of calomel; I would give him an infusion of saline and glucose at the same time. About six hours later I would give quinin intravenously, repeating the dose as indicated, small doses, not over five or ten grains in 20 c. c. solution. I have obtained excellent results from that line of treatment.

Dr. G. C. Chandler, Shreveport: During the first year of my practice I had an unlucky number of cases of blackwater fever, that is, thirteen.

The objection to the use of quinin in this disease, is probably due to the enormous quantities that are used by some physicians. The condition of the patient from this disease, clinically, is very similar to yellow fever and we all know that the use of irritating medicines in yellow fever is very fatal and I think in all human probabilities, the enormous use of quinin in blackwater fever has created the objection to its use by so many first class doctors. When I was treating these cases as long as the kidneys acted freely I was never alarmed over a case no matter how much blood appeared in the urine for this blood is simply broken down blood cells which is a foreign substance in the blood and its elimination is beneficial. I believe the use of quinin in moderation in these cases, is good practice, of course it is absolutely essential to encourage the action of the kidneys because it is suppression that kills in most of these cases.

Dr. Wright (closing): I appreciate the liberal discussion of my paper. I must say, however, that some of the discussion has led into certain liberal expressions on the part of some of our good doctors relative to the use of turpentine and very large doses of calomel, that are not borne out by the best thought in modern medicine. These very large doses of calomel are both improper and dangerous. More than the average amount of calomel needed for proper elimination is at once unnecessary, and its use in such large doses as has been mentioned, I would class as bad practice. Elimination, of course, is necessary here

as well as in other conditions, but we should not lose sight of the pathology, as we see it in these cases, nor should we assign undue value to the gastro-intestinal tract especially with reference to elimination. Elimination can best be effected if vomiting is controlled, when small doses of calomel will give desirable results. We must not think that these enormous doses of calomel will by their very momentum "turn down the vomiting."

If the vomiting is controlled, water can be administered as well as food, the blood stream will be replenished, and the patient in a general way is sustained. If we do this, and allow the patient to build up his own line of resistance against the toxic element that is producing a dissolution of his red blood cells, I repeat, if we do this, we will have gone a long way towards his recovery.

I wish to refer in this discussion to the question of the administration of quinin. I maintain that entirely too much attention has been directed towards the question of whether or not quinin shall be administered. Patients recover while others die regardless of quinin administration. It is better not to lay down any set rules relative to the use of quinin in these cases. Its effect on the stomach in a case already vomiting is certainly bad enough to justify a question as to its use. The amount of good to be obtained from its administration is, I am inclined to think, questionable. The vast number of cases that are seen and treated by the general practitioner who has no facilities for blood examination, renders almost valueless the opinion of some of our best men relative to blood findings indicating the use of quinin. The idea prevalent among doctors as well as laymen that quinin will precipitate hemoglobinuria in some patients is without sufficient foundation to justify its discussion here. That a few individuals have an idiosyncracy to quinin in this respect is true. We expect the average active doctor to meet not more than two or three patients of this type during his medical career. I maintain that this is an idiosynerasy just as urticaria always appears with some patients after quinin by mouth, although the hemoglobinuric type is seldom seen. A dissolution of red cells produced by a sufficient concentration in the blood stream of toxic elements, as in malaria, certainly is not aggravated nor may it be precipated by the administration of quinin.

Referring again to the use of quinin: Personally I am inclined to think at this time that after the stomach is sufficiently retentive for water and food and medicine that quinin may be administered without harm and with some possible benefit. In such cases I would recommend that it be given in ten grain doses intravenously, the doses to be repeated in six to twelve hour intervals until three or four doses have been given. Recurrences are less apt to follow the administration of quinin during an attack.

Again I wish to thank you for your liberal discussion.

THE USE OF NON-SPECIFIC PROTEIN IN OPHTHALMOLOGY.*

By T. J. DIMITRY, M. D., New Orleans.

Like many who have gone before and with the same desire to obtain an improvement in certain unfavorable eye conditions: i. e., corneal opacities, vitreous opacities, and other acute and chronic diseases of the eyes has stimulated the investigation of certain substances that may be beneficial in these and other conditions.

The study began with the use of serum obtained from the blood of the patient, and this serum was injected subconjunctivally. This had been suggested and was thought to possess certain beneficial effect. This Romer auto-serotherapy consists in raising a blister on the arm drawing off the serum and injecting it subconjunctivally. Good results are claimed in infected ulcers of the cornea, iridocyclitis, and infection following cataract extraction. Decot praises the use of phylacogen in the treatment of diseases of the eye and describes ten cases in which benefit was apparently obtained from this source. Alvarado praises antigonococci serotherapy in ophthalmology. Darier emphasizes the benefit of paraspecific therapy and Ribas Valero describes the results obtained with the injection of antidiphtheric serum in ulcer of the cornea.

Continuing this investigation the writer used nucleic acid hyperdermatically, autogenous vaccin and the Schæfer's vaccin and through their use he obtained a certain beneficial effect, yet he could not note that this effect was greater than that obtained by the subconjunctival injection of dionin, filtered air, certain chemical solutions and the internal administration of thyroid extract, aspirin and certain internal glandular extracts.

Further investigation and search of the literature showed so many statements as to the want of a true specificity, and Matthes, as early as 1895, demonstrated that an albumose produced the same reaction as was obtained with tuberculin and explained the fever as produced by the broken protein. Rumpf treated typhoid fever with a vaccin of the *Bacillus pyocyaneus* and with results, but this was before any possibility of obtaining any approval of a non-specific method.

Of recent date the Schæfer vaccin was severely criticized without

*Read at the 38th Annual Meeting, Louisiana State Medical Society, Alexandria, La., April 17, 18, 19, 1917.

even a reasonable clinical investigation on the part of its critics. To quote Peterson & Joblin, "The very fact that it did do certain things at times should have led to a study of why such favorable changes were brought about." The fact that it was non-specific, however, was sufficient to warrant the stamp of disapproval by the medical profession. Van Wagner obtained results by treating paretics with tuberculin and Black reported early syphilis treated with tuberculin. Luke used a non-bacterial protein in typhoid fever and Schmidt used milk.

With these observations and a precedence before us, and that non-specificity was of importance in obtaining certain effect and with a study of the work of Vaughan and others was convincing enough to attempt the use of non-specific protein substances and note any favorable results.

The essayist has been using a non-specific protein substance, injected intramuscularly, for the last year and recites a few instances when he has obtained results. Muller and Thanner and also Weiss recite a number of clinicians who are using non-specific protein to influence acute and chronic infectious diseases, and they report excellent therapeutic results.

The treatment used is cow's milk which has been boiled for from five to ten minutes and, after cooling five c. c. are injected cautiously into the gluteal region. The injection was usually administered in this quantity and at an interval of four or five days. Much smaller injections were also used and at greater intervals. Injections were also made subconjunctivally. As many as six injections have been given and in two cases the injection was used twenty to thirty days after the first. There was a rise of temperature, usually not over 100° to 101° in most cases and in one case the fever ran to 103°, but in this case the result obtained was proportionally better than in those cases without a rise of temperature. The improvement noted was striking and it called for more careful investigation. You can imagine when it was first used, in spite of good effect obtained, that the use of this milk after the first injection met with opposition when the possibility of danger from anaphylaxis appearing so large on the horizon, and obstructive assistants added increased difficulties in carrying on the investigation. Probably it would have been abandoned had not just at that time an abstract appeared in the *Journal of A. M. A.* on "The Parenteral Injection of Albumin in Treatment of Eye affections,"

Muller and Thanner citing a number of clinicians who had reported excellent results from injections of non-specific protein in acute and chronic infectious diseases. Reports would be of great interest, for at the beginning the work was not carried on systematically, sometimes using large doses, 10 c. c., and at other times only a few drops. In six cases the milk was used subconjunctivally and jointly with the intramuscular injections. How much to use and how often needs investigation; also if the cow's milk that we used was always furnishing the same amount of protein? Was there a danger when other substances contained therein were considered? All this had a tendency to embarrass and will continue to embarrass until we have a careful and systematic compilation. The warning to be given is to make progress slowly. In my cases no by-effects were noted, but yet we must appreciate that there is a danger.

Its use in three cases of trachoma showed a remarkably good effect obtained. I might compare it to the effect of salvarsan in interstitial keratitis; it improves the uveal condition. In one case the eye cleared up perfectly, and in all cases there was an improvement. In acute gonorrheal conjunctivitis the improvement was marked and in interstitial keratitis the effect was quite a surprise. Not alone to recite the good effect obtained by myself, I refer you to Muller and Thanner, who cite a number of cases treated with milk and with good results. Friedlander made gluteal injection of milk in forty-two cases of trachoma all of the severe type. The effect was surprisingly good. He remarks that an epidemic of trachoma was stamped out by its use.

Without a doubt the non-specific proteins have a beneficial effect but most interesting is a study of its action and here is where we fear a prolonged discussion.

Note how slowly we have made headway in accepting any evidence of beneficial effect non-specifically, yet this slow progress is not to be criticised for fear the pendulum will swing too far in the opposite direction; thirty years in recognizing a demonstration on non-specificity is certainly not to be complimented. The non-specificity has been and is being scientifically investigated at this time and in this country by such authorities as Vaughan, Wheeler, Peterson, Joblin, Sybil and Davis. Certain clinical facts impress us with the belief that the specificity in the sense of Ehrlich may

be produced by a chemico-physical agent not necessarily specific. Bacteria are particulate protein substances and much as the protein of vegetable and animal life. Chemically they differ only in their secondary and tertiary groups. All proteins contain the same poison chemically, though this protein come from bacteria, vegetable or animal life. Non-disease producing bacteria possess the same protein poison as do the pathogenic bacteria.

This would lead me into a field where others possess greater information, but I can assure you, gentlemen, this study of non-specificity is a labyrinth most beautiful to travel through, and with immunization, infection and protein sensitization also involved.

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TREATMENT OF THE VOMITING OF PREGNANCY WITH OVARIAN EXTRACT AND CORPUS LUTEUM.*

By P. J. CARTER, M. D., New Orleans.

Without going into the chemistry, pathology, and physiology of this disease, I shall attempt to give only the treatment that has been most efficacous in my hands. We know that vomiting of pregnancy, and especially the pernicious type, is a most common complication of the parturient.

It is most unfortunate, that our present knowledge of the subject is so limited and involves so many questions. Seeing these poor unfortunate mothers, fighting with death from constant and long continued nausea, that leads to serious results from inanition, with the constant distress it occasions, impresses upon us the fact, that we have to contend with a serious and treacherous disease.

This condition may make its appearance during any stage of pregnancy. It may appear a few weeks after conception, and continue for a few days, or it may continue throughout the whole of pregnancy. It may make its first appearance during the latter

*Read at the 38th Annual Meeting, Louisiana State Medical Society, Alexandria, La., April 17, 18, 19, 1917.

half of pregnancy, or even during the last month. I have had occasion to treat two such cases recently.

One of our foremost writers, in dealing with this subject says,

"Functional diseases may be so transient as to cause only a temporary inconvenience, while others are so grave as to endanger the life of the patient. Very often the vomiting of pregnancy is due purely and solely to local causes in connection with the gravid uterus, be it a mechanical pressure, a displacement, or some morbid condition of the uterus. Then again we see those cases in which the cause is simplex, and we are unable to define it, though it may be said to be due, partly to pressure, partly to sympathetic irritation, or partly to nutritive changes produced by the pregnant uterus."

Whether this disease has its initiation in the reflex, neurotic, or toxic variety, the treatment I shall outline is the same. On account of the lack of knowledge as to the causation of this disease, much study and countless remedies, and forms of treatment, have been suggested for its relief. Fisch, in 1884, reported a case of the severe form of vomiting of pregnancy cured by the use of thyroid extract. Seigmund reports a case cured by the evacuation of a densely packed colon.

To continue with the more modern forms of treatment, Pinard used eliminative measures, since he believed that intoxication was responsible for the tendency of pregnant women to vomit. Somers (*Western Medical Review,* November, 1910) treated his vomiting cases by the Ochsner treatment for appendicitis. Martin, of London, used gastric lavage, together with dieting and elimination.

The very latest method of treatment before the use of ovarian extract and corpus luteum was that of Fieux and Dantin. They used the serum of healthy pregnant women who were at the same stage of pregnancy as the affected ones, giving it intramuscularly into the buttocks in varying quantities, depending upon the gravity of the case. Their reports have been very encouraging.

I began my experiments in the treatment of nausea of pregnancy in October, 1915. It was through the co-operation and kindness of Parke-Davis & Co., and Lilly & Co., in supplying me with enough ovarian extract and corpus luteum to carry out my experiments. I had never heard of ovarian extract being used to control the vomiting of pregnancy, therefore I began on a purely experimental basis. At the Lying-In Hospital of New York, where I had the pleasure of serving as house surgeon during a term of

1913-14, I saw and treated quite a number of these cases. At that time we only knew of and practiced the eliminative measures to control the vomiting, just as we did in our eclamptic cases. Our results were not very encouraging.

Since October, 1915, I have had twenty consecutive cases. I report these on account of the phenomenal success obtained. Every case responded satisfactorily, and without a single failure, though in a few cases I found it necessary to increase the dosage. The duration of vomiting after beginning the treatment, averaged from one day to two weeks; the general average being ten days.

To give an idea as to the varying quantity of the drug and the duration of vomiting after medication, the following case reports are given.

Case 1. Mrs. H., age 22, para II. In her first pregnancy had severe nausea and vomiting. At that time she was six weeks pregnant. Abortion performed. A second pregnancy followed three months later with the same distressing symptoms. Twelve doses of ovarian extract, five grains each, were given three times a day, at the end of which time the condition was relieved entirely. At her fourth month, she began to vomit again. The same treatment was again given, after which she went to full term and delivered without any recurrence of the nausea.

Case 2. Mrs. S., age 23, para I. Was seen by me in her second month. Simple nausea every morning but very distressing. This had continued two weeks before I saw her. Six tablets of ovarian extract were given, though three controlled the nausea completely. She is now eight months pregnant, and has not had the least discomfort since her first medication.

Case III. Mrs. F., para IV. Three and one-half months pregnant, former pregnancies normal, no nausea. Vomiting began at six weeks, and had continued daily since. Vomited several times a day, irrespective of meals. She was extremely emaciated, countenance pale, skin cold and clammy. Temperature 100°, pulse 116. She was given eleven tablets of ovarian extract, five grains each, over a period of thirty-six hours, at the end of which time her vomiting was completely checked. Fortunately she did not vomit the medication.

Case 4. Mrs. F., age 25, para II. No nausea or vomiting with her first pregnancy. When first seen was five months pregnant. Extremely emaciated, cold and clammy skin. Temperature 101, pulse 120. Loss of weight in past two months had exceeded 20 pounds, and her vomiting had continued since the second month. The drain upon the body had been so severe, that she was in a delirious state most of the time. Stomach rejected everything. Glucose, 5 per cent solution was at once started. Twelve doses of corpus luteum by needle was given over a period of 24 hours, making the injections every two hours. At the end of this time she was a great deal better, and could retain ovarian extract by mouth. For several days ovarian extract was given three times a day. After the twelfth injection of corpus luteum, she was able to

retain liquids by mouth. In two weeks she was on a solid diet, and there was complete abeyance of all nausea and vomiting.

I do not contend that ovarian extract or corpus luteum will cure every case of vomiting of pregnancy, but it will largely control those of the toxic type. My experience with Copeman's method and the bimanual replacement of a displacement, have not been very encouraging. I have attempted to correct many of these displacements, to find relief only by the administration of ovarian extract.

With my limited experience with these drugs, I give the ovarian extract alone where there is not incessant vomiting, and the patient's stomach will tolerate it. The ovarian extract seems to give the quickest relief, and the patient is not annoyed by the repeated use of the hypodermic needle. In cases of a more serious type, in which the patient vomits everything, then we rely upon our corpus luteum by needle. For the reason that patients object to the needle, and the lengthened time (in my experience), to get results with the corpus luteum, I begin my ovarian extract as soon as the stomach will tolerate it. Corpus luteum has been a life saver in those grave cases, in which vomiting was incessant, and should be administered as long as the patient is in such a perilous state.

The literature upon these two drugs in the treatment of vomiting of pregnancy is extremely scarce, so much so that barely half a dozen papers have been devoted to the subject. John C. Hirst, (*Jour. A. M. A.*, Vol. LXVI, No. 9) gives a preliminary report of five cases with 80 per cent success. In these cases he administered corpus luteum only and by needle. Later on he was able to add a few more cases to his experiments, which increased his per centage to 84 per cent. The smallest dose used in this series of cases numbered four; the largest forty-two, the average dose was eleven.

From these statistics we should be convinced of the virtue of these drugs. With a record of 84 per cent success, plus a record of twenty consecutive cases treated successfully, should cause every obstetrician to give this treatment a thorough investigation as to its therapeutic value.

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Discussion on the Paper of Dr. Carter.

Dr. E. L. King, New Orleans: In discussing the question of vomiting of pregnancy we should first take into consideration the various types of this order, and we find it best to divide the cases into reflex, neurotic and true toxemic classes, depending upon the underlying cause. The reflex type is most often caused by a retrodisplaced gravid uterus, an ovarian tumor, adhesions, or a similar local condition. The neurotic type, as Williams especially brings out, is found most often in the higher class of women, especially in America and France. The true toxemic type is of more infrequent occurrence.

Williams states that vomiting of pregnancy of some form or other occurs in about one-third of pregnant women, and DeLee brings out the point that true pernicious vomiting occurs in the proportion of about one in every thousand cases. So the great majority of cases we have to treat will be of the reflex or the neurotic type. The reflex type, as mentioned by Williams, is often cured by simply treating the underlying cause, e. g., replacing a retroposed gravid uterus or removing an ovarian tumor. We must always bear in mind that vomiting **during** pregnancy is not necessarily the vomiting **of** pregnancy. There is a case reported by an Italian author, in which abortion was induced on account of vomiting; death ensued, an autopsy disclosed the fact that she had cancer of the stomach; this had caused the vomiting, and hence the abortion was unnecessary.

As regards the cause of this complaint, we are still in the dark. There is practically always some underlying toxemia, except in the true reflex cases. But we should always bear in mind that vomiting in the last two or three months of pregnancy may be due to eclampsia or to some renal condition.

To differentiate between true pernicious vomiting and the milder types is sometimes difficult and often impossible. Williams lays stress upon the urinary examination, especially the estimation of the per centage of ammonia in the total nitrogen elimination. This is a rather difficult procedure and is suitable only for the laboratory and not for the general practitioner. He states that any case that shows an ammonia per centage of 20 or over should be considered toxemic and aborted at once. On the other hand, in his opinion, any case showing a per centage below 20 may be toxemic, but is more probably neurotic; in the latter event, the patient can be cured by rest in bed and suggestive treatment. If these measures fail, abortion may be necessary.

The prognosis of the milder types is good; the severer forms of the neurotic variety present a higher mortality, and the true toxemic variety present a higher mortality, and the true toxemic variety a still higher per centage. Thus, in one hundred and eighteen cases collected by DeLee, there were 46 deaths (these were true pernicious cases.)

The treatment advocated by Dr. Carter and employed by Hirst has changed things quite a bit. Why was this first thought of? I do not know why Dr. Carter started using it, but Hirst gives his reason thus:

"Every woman, during the period of sexual activity, is constantly absorbing corpus luteum. No sooner is the corpus luteum of one menstruation disposed of, than another appears to take its place. With the onset of pregnancy, this absorption ceases. The corpus luteum of pregnancy constantly increases in size, until it reaches its acme about the third month. From this time on, it is gradually absorbed. The nausea

of pregnancy, beginning during the period of non-absorption, disappears about the time that the corpus luteum begins to decrease in size. Is it not reasonable to assume that this is not coincidence, but cause and effect, and that the corpus luteum plays an important part in relation to the nausea?''

With this thought in mind, he began using it, and his results have been very good. In his last report he relates the results in thirty-six cases that he has treated, with thirty-two successes. Of the failures, one was reflex and was cured by replacing a retroverted uterus. Another case was probably neurotic; this patient had a large goiter and it was thought that this might have been a factor in the case. Two failures are unexplained. That leaves thirty-two cases out of thirty-six, and of these he mentions that two were of the true pernicious type. The others were the ordinary cases of vomiting of pregnancy which we see, which are extremely annoying, and which may become pernicious if neglected. One of these cures, he notes, was probably due to suggestion, as she received but four injections. Judging from Dr. Carter's report, he has had a higher per centage of the true pernicious type, and thus his results are more valuable.

Another point about this treatment with corpus luteum is this: that the manufacturers tell us that it is not necessary to insist that the extract be made from pregnant animals. Parke, Davis & Co. state that, taking the animals as they come, about 90 per cent by weight of the corpus luteum is from the ovaries of pregnant animals. That is due to the fact that something over 60 per cent of the animals slaughtered will show pregnancy, and, of course, the corpus luteum of these will weigh two or three or a dozen times as much as that of the non-pregnant ones.

Besides Dr. Carter, others in New Orleans have used this treatment with success. Dr. Miller has used it in several cases, and is quite enthusiastic about it. The late Dr. Lanaux also used it quite extensively. At the Charity Hospital, in our obstetrical service, it has been used in a good many cases, and we have had practically uniform success with it. I think that, considering the experiences of Dr. Carter and of Dr. Hirst, it can be recommended as a treatment that will give better results than any other treatment so far advanced in the ordinary vomiting of pregnancy, and even in the true pernicious type.

Dr. P. B. Salatich, New Orleans: It is wrong to let this important subject go by without more discussion. We have had some experience on both sides in these cases. The interesting part is how and why the corpus luteum acts. Many women go on and have two or three children and are perfectly all right, only vomiting a few times. They may vomit in the morning, and then they may have a third or fourth child, with pernicious vomiting. The question comes up in my mind, if it is due to a lack of ovarian secretion, why should not these women, that have had no trouble previously, have trouble probably with the fourth child, and why should they have trouble with the first child and not have trouble with others? I remember a case of a woman who is now pregnant two or three months. Eight months ago I had quite a time trying to save her life. She was almost moribund. I was afraid to take the responsibility myself, and called in an elder practitioner, and the first time he examined the woman she was almost pulseless, and the doctor ordered that something be done to the uterus or the patient would die in two hours. I had tried different means of treatment of this woman, and, simply by puncturing the membranes and letting out the fluid, the patient

was immediately relieved. One could not attribute that to a lack of ovarian extract. If it was due to that, simply by puncturing the membranes and relieving the pressure would not have immediately relieved this patient. In many cases you find, by simply letting the waters out, the patient will experience immediate relief, or simply by puncturing the membranes she will immediately stop vomiting. In many of these cases, if you examine the cervix, you will find it is markedly ulcerated, and probably by making a few applications of iodin to the cervices the vomiting stops. Then, again, you find that many of these cases are of neurotic origin. I think more than 75 per cent of them are of neurotic origin, and, whether the ovarian extract acts by its influence as an analgesic, we know it acts not only on the ovary itself by supplying secretion that is probably diminished, but it quiets nervousness and relieves headache. Is there a lack of secretion? If there is, why should not every woman have it, or has it analgesic properties, or is it psychopathic? You take many of these cases, and I have found, by giving them large doses of bromid and chloral per rectum, first giving them preliminary treatment with calomel, starting with one-sixth of a grain and given every hour for twenty-four hours, the vomiting will stop. Then I give them a purgative. After that I give them doses of bromid and chloral, and in many of them the vomiting stops. I spoke to Dr. Carter and asked him if he had any idea how he thought the corpus luteum acted and on what physiological lines? He did not take that phase of the subject up, but I told him it was interesting to me to know how it acted—why it should act in one case, and why a woman should have trouble in one pregnancy and not have it in the next.

Dr. S. M. D. Clark, New Orleans: This paper presented by Dr. Carter is a splendid one to bring before us, and, as Dr. King said, we have been tinkering with it and trying to work it out since Dr. Hirst came forth. Before it came on the horizon I thought I was beginning to work out a scheme that had some virtue, in that it gave such universally good results, and that treatment consisted in this: One of the fundamentals, of course, is that there are various types, but one of the fundamentals is to go down to the basic side of it, to get the patient away from the family if you can. In some of these cases of vomiting of pregnancy there is a neurotic side, and it is well to get the patient out of that environment and put her in a different one if you can; get a good, sensible nurse who will carry out your instructions right, discipline them properly without any lack of humanity. If you can get these women to go to an institution, so much the better. I have discovered acetone and diacetic acid in a goodly number of these cases. Therefore, putting these patients on a drip of glucose and bicarbonate of soda, say a pint, containing fifty grains of sodium bromid, and filling them with fluids, will help to correct the acidosis and the glucose will play its part in the carbohydrate changes. The other thing I usually do is to give small doses of milk of magnesia by mouth for the acidosis. In ten to twenty cases I can recall in the last eighteen months, that treatment has been followed by gratifying results. We have tried everything we could, and nothing seems to be of value except to empty the uterus. I would simply make a plea for a little opportunity to try this out, and, so far, it has been one of the most gratifying things to send such women home in a week, eating what they want. When the corpus luteum extract came on the field I tried it in conjunction with this, so I am not prepared to

say just how efficient it is and how much one depended on the other, but I think Dr. Carter has brought a real live thing before us, and a thing that is available to us all, and we ought to try it out and let the jury make its final report in two or three years, and we will know whether we have got something good and permanent or not.

Dr. O. W. Cosby, Monroe: About seven years ago I read a paper before this body at New Orleans on this subject. I took as my viewpoint, "all the ills peculiar to pregnancy, from the simple morning sickness to pernicious vomiting, eclampsia and acute yellow atrophy of the liver, were due to one and the same condition, namely: sub-oxidation (excluding, of course, the nervous type), and that the only difference was a variation in degree or intensity." I recommended the treatment outlined by Dr. Carter, only I used thyroid instead of corpus luteum. It gives me great satisfaction to know that this idea is now being taught in our best medical schools (or some of them), and I now believe exactly the same, only that I think I would use corpus luteum instead of desiccated thyroid. This, together with hygienic, dietetic and antacid measures, elimination and the prohibition of all proteins, seem to me to be all there is known on the subject.

Dr. E. Denegre Martin, New Orleans: To me, no explanation has been offered that is quite clear why we are using a drug which is giving results, and the reason the explanation is not clear is simply this: every one of us has had experience with these cases. The last experience I had was about six months ago, when a patient was brought to me from the country who had been vomiting persistently for weeks. She was in an emaciated condition, and was brought for the purpose of having an abortion done. She reached the Touro about 9 o'clock at night. I saw her, and, as she was comfortable, did nothing that night. As she did not vomit for several hours, I concluded to wait until the next spell of vomiting. She never did vomit again. I kept her there a week and she went on to term.

I was called to see another case on one occasion, and the woman was in such bad shape that I concluded to perform an abortion. I thought I would dilate the cervix and let it go at that. I dilated the cervix, she stopped vomiting, and was delivered at term. How are you going to explain it? Possibly it is a reflex condition that brings it about, but what causes it?

I would like to hear, at the next meeting of the Society, how corpus luteum affects this condition, and when we get this information we will have the key to the situation.

Dr. George Dempsey, New Orleans: There is a temptation to-day to adapt all remedies to the particular cases. Vaccins and extracts and substances of that kind are being used to such an extent that the medical profession ought to be very cautious. Formerly, pharmaceutical preparations were handled like most of these preparations to-day. They were put through a test from a pharmaceutical standpoint. The United States Pharmacopeia, before adopting a preparation, required a period of ten years' trial before it was put before the medical profession and used. To-day it is the contrary. Any detail man of any consequence or any manufacturing house having a preparation which they think valuable is apt to put it in front of the physician and start him to using it.

The question of vomiting of pregnancy is one that has agitated the profession for twenty or thirty years. I remember some years ago

hearing Dr. Cznarnowski, who was considered at that time one of the best obstetricians we had in the City of New Orleans, make the argument that he never allowed a nurse to wash his babies; that he washed the babies himself. He was a druggist, and used every means in the drug store to control the vomiting of pregnancy. Once upon a time the Society had a meeting and Dr. Cznarnowski spoke on the vomiting of pregnancy. The hall was almost filled that night. He said he had tried everything under the sun, but by simply putting the patient in the knee-chest position it controlled vomiting. So I will say, with a great deal of respect for Dr. Cznarnowski, that I have tried everything under the sun, but by changing the position of the fetus you will get exceptionally good results. Get the patient to turn over in bed, or get her in the knee-chest position for five minutes while you are waiting for further experience with the extracts, and you will find your results will be very gratifying.

Dr. J. T. Abshire, LeRoy: As country practitioners, we have a good deal to do with the vomiting of pregnancy. We have women in the country who have hyperemesis gravidarum as well as you have women with it in the city. Thus far only city doctors have spoken about this matter. I want, as a country doctor who has had experience, to say a few words on the subject, and I am somewhat like Dr. Martin. I had a case that got better after eating popcorn—not prescribed by me, however.

Dr. Clark has said that one of the fundamentals was something which he explained to you. There is another fundamental, and that is the confidence of your patient in hand. If you have not, I am satisfied that neither the corpus luteum nor ovarian extract will stop the vomiting, because I consider these cases almost all neurotic in origin. If you have not the confidence of the patient, let her get another doctor in whom she has confidence. I have stopped the vomiting of pregnancy in a hundred different ways, and became quite enthusiastic over each treatment, only to drop it later on. I have painted the cervix uteri with 10 per cent nitrate of silver and have had remarkable results in these cases. I have likewise done what Dr. Dempsey has done; I have done all kinds of things, and they have always gotten better, so far. I have not lost any of these women, but I did see one die in the practice of one of my confrères. She died quickly.

I am glad Dr. Carter brought this subject up and has given us another weapon in our armamentarium to fight this terrible trouble, but I am very much afraid we will have to give him three years to report back on it. I believe in less than three years he will make a report that is not quite so good. Hyperemesis gravidarum existed long before Hippocrates, and will exist long, long after we are all dead and buried.

Dr. Thomas E. Wright, Monroe: I believe that most of us appreciate the fact that we have in the human body a kind of equilibrium as to growth and development a..d maintenance of health, etc., that is regulated by the internal secretions. I think the paper just read is timely; it has merit in it, and the author gives us an index to the work he has done which will be of considerable benefit to the profession. Without a doubt there are certain types of vomiting in pregnancy that are due to a loss of this equilibrium with reference to the internal secretion maintained by the ovary. No doubt but that the usual nausea and early morning vomiting in the beginning of pregnancy, even when not severe, is a manifestation of this loss of equilibrium, in a small way. Inasmuch

as the reproductive organs are experiencing very rapid and marked changes, and inasmuch as the ovary, with its secretion, presides over, to a great extent, this reproductive apparatus, might we not conclude that, in the beginning of nearly all pregnancies, the demand upon the ovary for a greater supply of its secretion to maintain an equilibrium is greater than the ovary at once can supply? If this is a tenable thought, might we not suggest ovarian extract as a general measure in every case of pregnancy where nausea or vomiting obtain, even in a small way?

I am inclined to be rather enthusiastic about this subject, and I trust that future developments will substantiate every claim made by the author.

Dr. F. V. Gremillion, Alexandria: I would like to relate briefly some experience I have had along this line, not with ovarian extract, but with pituitary extract. The first case was a VI-para. She began to vomit about the fifth week of pregnancy. I had confined her in five labors before, and she only had slight vomiting during the first five pregnancies. I used all the regular remedies—oxalate of cerium, cocain, and everything we all use. I put her in the knee-chest position, and finally the husband came to the office and said: "Doctor, you confined my wife before and she cannot stand this; we will have to do something else." I said to him: "Let us get another doctor and see what he says about the case." So we studied a great deal before putting anything into the uterus and we decided to give a dose or two of pituitrin. We did so, and the next morning she was better. We gave her another dose that night, and we kept that up for eight days, and, as she was so much better, we discharged the nurse. The nurse went home, stayed about two weeks, and the woman began vomiting again. We sent for a nurse, put the patient on pituitrin, and she soon stopped vomiting, and was subsequently confined with a healthy child.

The next case was VIII-para. I confined this woman twice before. Five years before I confined her she had twins, two years before she had a boy, and she had been a hearty woman all her life; she had been in good health; she had a small fibroid, but never had any serious time before. I tried pituitrin; I tried local applications, like Dr. Martin said, and before I put her on pituitary extract, which I gave her twice a day, she took ten doses, repeated at intervals, and got perfectly well.

A third case I had was a III-para. She had not been confined as yet. She had been pregnant five weeks. She gave a history of vomiting during her first pregnancy. These people moved to Alexandria about a year ago, and the woman was confined by some other doctor in her first two confinements. I tried the ordinary remedies, and finally she began to have a slight uterine contraction. She had a mucous discharge, which was slightly tinged with blood. I examined her, made an application, and gave a dose of pituitrin by needle, and in thirty minutes the bleeding stopped, and she is all right. You can give pituitrin by needle when they cannot retain anything else. There is a correlation between the internal secretion of the ovaries, thyroid, the pituitary and suprarenal, and that is the way I understand it.

I remember some years ago of having had such a case as that reported by the doctor. We had performed an abortion on her some years back. She was taken to the Presbyterian Hospital. I believe one great advantage in the use of these products is that you can give them

hypodermically, and the time will come when we will find, as the doctor says, extreme anxiety and worry from confinement on account of the disturbed internal secretions.

Dr. Carter (closing): I wish to thank the members of the Society for their free discussion of this paper. Of course, I have had cases in which I have not been able to control the vomiting. I have had cases in which I gave a little of the cerium oxalate and bismuth sub-nitrate. In a series of sixty consecutive cases, I will defy any man to get up and say that this treatment is no good.

In regard to the use of popcorn, that is all right, as well as the other remedies that have been mentioned here, if the stomach is able to stand it. But let us suppose a patient is vomiting incessantly and cannot retain anything; what are you going to do? You are going to get results by the administration of ovarian extract, or, rather, corpus luteum, by the needle.

Dr. Edwards: What is the dose of corpus luteum?

Dr. Carter: One c. c. in ampoule. I have not had a chance to use ovarian extract in ampoules; I have some now, that has come about a week ago, that I intend to use in my cases of excessive vomiting, where I have used heretofore corpus luteum. I have had better results with the ovarian extract than with corpus luteum.

In regard to how and why this treatment acts. I used it from a purely neurotic standpoint in cases of hysterectomy. In a few cases I have used it in women who have undergone a severe nervous strain following complete hysterectomy, and the ovarian extract relieved them. I have not had encouraging reports from corpus luteum that I have used, but ovarian extract does relieve the nervousness of these women. If this vomiting of pregnancy is a neurotic condition, the ovarian extract should have some effect, and I began using the ovarian extract upon this assumption.

I appreciate Dr. Clark's very ample discussion. I have had five cases of the pernicious type of vomiting, with temperature and with a high pulse rate, accompanied with an extreme degree of hyperemia. I started these cases with 5 per cent glucose solution to get fluid in the body. I have never used bromid or chloral, as I have been afraid to do so. I have given two ampoules of corpus luteum every twenty-four hours. I have given fifteen grains of ovarian extract by mouth for twenty-one days without any bad symptoms. I wish every man here would try this and test it out as to its merits.

COMPOUND FRACTURES—A PLEA FOR EARLY PERMANENT FIXATION.*

By WM. M. PERKINS, M. D., New Orleans.

The object of this paper is not to burden this meeting with case histories nor resumes of the best recent text books, but to summarize for consideration some problems presented by compound fractures, and especially to emphasize the advisability of early fixation.

Some fractures not compound call for early operation but will not be discussed here, as it is hoped to concentrate attention and discussion exclusively on compound fractures. In these, the primary risk of infection has already been incurred, and we cannot urge the objection that the skin should be left intact to exclude bacteria.

Personal observations and experiments are the basis of the paper.

There was formerly a marked disposition, in treating compound fractures, to delay the final bone work until all soft tissue infection was under control, and especially if the case came to the surgeon several days after injury. Some of the most recent articles still suggest a late date for the final bone fixation. Much loss of time and multiple operations, with their attendant dangers, are unavoidable results.

Aside from removing all debris, including dirt, clothing, useless bone fragments and hopeless soft tissues, the most important problems in compound fractures, aside from the bone repair itself, may be readily grouped under hemostasis, infection, soft tissue repair, drainage, dressing, splints, and pain.

The most efficient solution of each one of these problems is made more easy and sure by the early fixation of the bones in what we hope to be their permanent position. Ample incisions are necessary to secure complete hemostasis and to thoroughly inspect any exposed blood vessels which may, at some later time, slough and cause hemorrhage. The thorough cleansing of the wound to minimize infection and accurate repair of such muscles, tendons, ligaments or nerves as may be improved by sutures, all necessitate free incision. This affords facilities for satisfactory bone fixation through operative wounds already made and obviates the destructively superfluous incisions which would be made to finally arrange the bone fragments if the old plan of delaying the bone work were

*Read at the 38th Annual Meeting, Louisiana State Medical Society, Alexandria, La., April 17, 18, 19, 1917.

followed. Furthermore, it is much easier to properly align bones immediately after injury than to do the same work when masses of scar tissue not only necessitate new incisions, but also demand much larger incisions because of the unyielding condition of soft tissues matted together with scar. Procedures are often rendered impossible by the presence of large masses of unyielding connective tissue which will not permit the proper alignment of fractures without excising impracticable amounts of scar tissue. The approximation of the fractured ends may be easy and satisfactory through large incisions in normal and yielding soft tissue, and may become formidable or impossible if weeks are allowed for the accumulation of connective tissue masses. Besides this, our knowledge of normal anatomy helps much in operations on normal tissues, but becomes of much less use when cicatricial formation has pulled or pushed important structures from their normal lines and planes. Then too, under the head of hemostasis we must remember the danger of damage to vessels from bone fragments which are not completely mobilized and which change their position when a limb is handled during a dressing, or even from muscular action, while a limb is apparently resting quietly in a splint.

The fight against infection may be prolonged for weeks. Even with the astonishing results recently shown by Carrel, an ugly compound fracture may require at least three weeks before it is sufficiently aseptic for the ideal delayed bone fixation work. Three weeks would in many cases be long enough for some efficient callous formation if the bones were properly aligned. On the other hand, if the final fixation be delayed the initial repair effort of the bone marrow, in place of being utilized to join together properly aligned fragments, may be wasted in the formation of new growth about the ends of bones not brought together, which new growth has to be ruthlessly cut away when the fracture is finally attended to. It is well to remember that the body repair forces and supplies, though prodigal, are not inexhaustible. It is a matter of common observation that bone repair is quicker, surer and firmer when it takes place immediately after the injury than if it can only be utilized at a time when the first callus must be cut away to secure proper apposition. The second rally of the bone repair forces is not as efficient as the first. The point to be emphasized here is that the time utilized in treating a bad infection through any open incisions can also seriously forego for the first and most important

steps of the bone repair. The question of adding to the danger of infection by operative procedure upon the bone itself will be considered with the question of the selection of the bone fixation procedure because the selection of the procedure in compound fracture work must be largely based upon relative danger of infection.

The repair of the soft tissues must be more satisfactory if planned in connection with the bone restored to its normal position and alignment or at least in what is going to be its final position. Where the fracture permits of over-riding, muscles will inevitably shorten scar tissue to an extent sometimes astonishing, and scar tissue often makes this shortening permanent. Practically good bone is sometimes sacrificed and a limb permanently deformed thereby, simply because at the time of the delayed bone operation it is found impossible to secure sufficient mobility to replace over-riding bone fragments. Further, callous union often occurs between badly placed fragments, and must be cut away at the delayed operation with increased trauma and hemorrhage, and exasperating waste of practically good bone tissue which might just as well have been utilized in the repair work, if the bones had only been placed and held in proper position early. Proper provision for drainage and adequate openings through which to dress the wound often would require additional incisions. These additional incisions are sometimes necessary for drainage and dressing purposes in early operations. They are much more often necessary when the operation is delayed.

It is well to theorize about delaying the bone operation until perfect asepsis has been secured and the operator may work in sterile tissues. When such conditions can be advantageously secured, do it. But in many cases this ideal sterile condition will only be reached after many months; in fact, a delay of many months has been advocated for the bone repair of compound fracture by some of our prominent surgeons. The acid test is this. "What would you want done to your own leg if you had a compound fracture?" The patient's loss of time must be considered, provided we do not sacrifice safety to time.

The question of splinting a compound fracture is usually troublesome, but if the bones be not fixed splints must be more elaborate, bandages must be more voluminous and tight. The bandages and splints must prevent the disposition of muscles to displace the fragments, extension must be sufficiently active to prevent shortening

and the damage which might result from the pressure on vessels or other soft tissue by unrestrained bone fragments.

Pain is sometimes a prominent factor. The fundamental law in treating fracture pains, is immobilization. Therefore immobilize early.

In selecting the type of operation for early bone fixation, the effort to minimize infection should be always in mind; therefore complicated operative procedures are less valuable than simple ones. Lane plates are at times so very valuable as to be practically indispensable, but they are open to the one big objection that they are somewhat dangerous in the presence of infection. The use of large Lane plates requiring three screws on each side of a fracture involves relatively large operative wounds in the surrounding tissues and opens up large areas to the infective process. Even where short plates with only two or three screws are used, the screw wound in the bone is badly adapted to drainage if infected, and the plate itself inhibits drainage. The plate method is therefore not especially adapted for early operations in the presence of probable infection.

Simple wire and the simple band method devised by Drs. Parham & Martin are much more useful for the class of cases we are considering. The band method is especially adapted to the oblique fracture and the simple wire to the fracture which is practically transverse. The wire has the additional advantage of being more clearly applicable to any kind of fracture, and therefore more generally useful for the surgeon's emergency outfit than any other one thing which has been devised.

The main objection to the early use of the wire has been an additional danger to infection caused by the hole drilled in the bone ends. Practical experience has convinced the writer that this danger is not great and can be met. The drill holes close early about the wire and drain readily. Iodin, or other selected antiseptic has ready access to the drilled holes. They need not be very far from the fractured ends, and when we consider that the whole fractured end is subject to the dangers of infection from the wound, the slight added risk of the drill hole becomes less important. Furthermore, a series of practical observations extending over many years has shown the writer practically that a large percentage of fractured bones will heal in spite of and in the presence of wound infection, and the patient is not more liable to a wide

spreading osteomyelitis because his bones are in the proper position, than he would be if the same bones were lying helter-skelter in the same wound. Further, it is the rule and not the exception, that bone union will begin long before the infection is controlled.

Patients should not be subjected to repeated operations, prolonged and expensive after-treatments, to say nothing of the other disadvantages. We have discussed above in connection with delayed bone repair. It is useless to theorize about how much better it is to secure perfect asepsis by the Carrel, or any other method, when as a matter of fact we know that thousands of compound fractures are going to be handled under conditions which will prevent any ideal wound asepsis being reached within six weeks to four months.

It is not intended to urge that all bones should be wired or banded, many compound fractures may be satisfactorily kept in alignment by reasonable splints. Some cases are so simple that, although technically compound fractures, they cease to be compound in a short while and may practically be handled as simple fractures and with very little dressing.

The idea of this paper was distinctly to discuss the ugly cases, having especially in mind various vicious mal-position of bone and well marked infection. One of the bug-bears of using any metallic device on compound fractures has been the danger of leaving such a foreign body in any infected wound. This danger can readily be obviated by planning from the outset to use only temporarily whatever metallic device may be selected. Once a fair amount of connective tissue has united the bone ends, all metallic devices become superflous from that time on. One of the most important factors in the successful early operation is the removal of the artificial device as soon as it has fulfilled its purpose of maintaining the bone ends in apposition until nature has bridged the gap.

Even the formation of masses of scar tissue around the bone ends will often be quite sufficient to maintain satisfactory apposition with the reasonable help of a splint. The burden thrown upon splints and bandages when fractured ends are free is a heavy one. On the other hand, as soon as fractured ends are so bound by connective tissue, whether it be from the marrow cavity or from surrounding soft tissues, that lateral displacement of bone ends is prevented, splints and bandages may be simpler, and lighter and looser. This means less pain, better circulation, better nutrition, less confinement.

The contrast between splint requirements for recent fractures as compared with those partly united opens up such an important and necessary discussion in itself, that it will be considered at some future time in another paper.

Today's trespass upon your time and attention can only be justified by the importance of more general thought and discussion of the value of early complete operations in compound fractures, so that all the re-constructive forces of the body may be utilized at a time when the vigor of the patient has not been sapped by inactivity, mal-nutrition and sepsis. The paper has not been garnished with illustrative cases because every surgeon who has handled much emergency work can readily supply from his own memory illustrations of the various points emphasized.

Discussion on the Paper of Dr. Perkins.

Dr. Joseph A. Danna, New Orleans: I think the subject that has been brought before us by Dr. Perkins is very important, and we ought to look at it from the serious viewpoint that it merits. He made a point I would like to lay stress on, and that is, if you do the operation of bone plating or any operation in an ununited fracture of a fracture which is not in good apposition, after connective tissue formation around the ends of that bone, you have the same effect that you would have if you had a skin wound and you did not suture it until it had granulated for two or three weeks. You could not expect union to take place as rapidly and as strongly and as accurately as you would get if you sutured that wound immediately after it was inflicted. This very fact is responsible also for some of the bad repute that operative procedures on fractures have, because a great many men only operate on fractures which are ununited, which have failed to unite with the use of non-operative measures, and they find bones which do not unite very readily. If you take a freshly broken bone and put the two broken ends together, you get firm union in three or four weeks; but if that bone has been surrounded by connective tissue formation, such as you get after three or four weeks of injury, and you put these bones together, you do not get primary bone union at all, and the chances are, unless you cut away the connective tissue covering the ends of the bone, you will not get union, and you are apt to think the operative treatment of fractures is not a good thing.

Dr. Herman B. Gessner, New Orleans: There is one thing that strikes me about the early rectification of deformity in compound fracture, and that is, if we are to limit infection in a compound fracture, if we are to eliminate it as far as possible, we must get early complete immobilization, and it is easier to immobilize the fragments which have been put in proper alignment than those that lie along side each other with considerable overlapping. So far as the danger of infection is concerned, it seems to me that proper sterilization of all exposed surfaces with tincture of iodin, upon which Dr. Perkins laid stress, will obviate that.

There is one point I want to bring out, and that is, in many cases of fracture in which we cut down and bring about operative reduction of the deformity, it is possible to reduce the fracture and get along without the use of a metallic device of any kind. In a fracture of the leg, if the fibula is not badly broken, if tibia is subjected to compound fracture, and especially if the outline of the fracture is irregular, it is possible to reduce the fracture under incision and get the fragments together properly, and then put them up in a splint or cast without using silver wire. I am not partial to the silver wire because so often after wiring bones in the past I have had the wire to break on me. We have had that experience, but I must admit the use of the heaviest wire probably gives good results.

Dr. E. Denegre Martin, New Orleans: We have been using wire for quite a long time in compound fractures. I know what the internal splint is, and I simply want to impress upon those who have not made use of it to do so. In dealing with a compound fracture you have an open wound already. We sterilize the wound as far as we can, put the bones in apposition, and secure them by that method which can be most easily and most quickly applied and at the same time most efficient.

About ten days ago I had a transverse compound fracture of the tibia. I made a big mistake in that case and ought not to have done so. Instead of using strong wire, I put it in apposition and sutured with kangaroo tendon. The kangaroo tendon gave way in ten days.

The best wire to use is what is known as annealed iron wire or bronze aluminum wire. Silver wire will break. You do not know what a source of satisfaction it is to have the bones in perfect alignment. We sometimes use a plate in these cases, at other times wire, or sometimes a band. We let this remain about four weeks when the surrounding tissue forms a gutter to hold the bone in position.

Dr. K. Winfield Ney, New Orleans: Dr. Perkins has brought up a subject which should elicit a good deal of discussion, namely, whether compound fractures subject to infection should be plated or we should put in any foreign body.

One valuable principle in the treatment of compound fractures is that by immobilizing the ends of the bones we get better apposition and do away with a great deal of pain. I have had some experience in dealing with these fractures. While I was in charge of the base hospitals at Cherbourg, there were 700 beds in my service, 20 per cent of these cases were compound fractures of the thigh. I have had on hand as many as one hundred and twenty cases of compound fracture of the thigh at one time. The idea of primary disinfection of these fractures by chemical antiseptics is really out of the question, and although it may be possible, I have never found it to be so, particularly where bony tissue is involved. Bony tissue does not resist infection and pieces slough off after healing has taken place and sinuses persist. The idea, of course, is not to make our work as light as possible, but to get the best results possible in the shortest time. We can do this by the use of the methods advocated in the present war where there is a large amount of this material. We can get practically complete secondary sterilization of wounds, when we can plate them or do the same as we ordinarily do in simple fractures.

With regard to the use of the Lane plate, one necessarily has to bore

holes in the bone and in so doing one opens up other channels in the medullary canal which may become infected. These plates, as a rule, do not hold very long. One thing I have found valuable is a device which has been recommended by Dr. Parham and Dr. Martin. I have used it in many cases and it seems to be reliable in the immobilization of fractures when it is possible to use it.

In so far as wire is concerned, phosphor bronze wire is by far the best.

Dr. A. B. Nelson, Shreveport: Just a word or two with reference to compound fractures because I exposed myself a while ago. The doctor has put it rather strong when he said it is always a question of what to do with a compound fracture, whether to put foreign material in or not. I heard Dr. Cohn, of New Orleans, in 1913, say he was putting on Lane plates in compound fractures and they got well. I went home and had a case of compound fracture of the tibia in an old negro man. I used a Lane plate. The wound suppurated and suppurated until I took it out. It continued to suppurate and finally the fibrous tissue formed over the ends of the bones and I tried to persuade him to let me go down into the wound and do something for him. But he would not let me. I did not get to do anything more. My idea was to transplant a piece of bone, and that is my idea in those cases where the fibrous tissue has formed over the ends of the bone, trim off the little fibrous tissue and bare the ends of the bone. I have made it a practice to bore several holes in the end of the bone, and that gets through the dense portion of the bone and allows blood to pour out through this bone anew. In these cases of ununited fracture I believe the very best thing to do is to transplant a piece of bone.

The splint to which Dr. Salatich referred is a splendid one; we do not have any foreign material in there. It is with fear and trembling that I put foreign material in a case of compound fracture.

Not long ago a dentist in cranking his automobile sustained a compound fracture of the arm. It was an ugly looking thing. He had sense enough not to attempt to pull it back. Being a dentist his livelihood depended upon that arm. I was very particular about that arm as to what I should do with it. I did not put a foreign substance in there. I reduced the fracture, pulled it back, giving him an anesthetic for that purpose. In reducing fractures I give the patient an anesthetic and if he will not submit to that, I tell him I will not set the arm or leg. I have had some bad results otherwise. In the case of the dentist, as I have said, I gave him an anesthetic, reduced the fracture, sewed up the space torn by the bone where it came out and put the arm in this position (indicating) in a plaster cast. I let it stay there two weeks. He did not have more than ordinary reactionary temperature, and at the end of two weeks I took off a portion of this, but he would not allow me to take it all off. I took out the stitches, and while the man has not a normal arm, it is a surprisingly good result.

Dr. Joseph A. Danna, New Orleans: A point I wanted to bring out a while ago was this: If it is possible to keep a foreign body away from the operative wound we should do it. These fractures are usually oblique, and you will find that if you break off the sharpest point of one fragment and insert each end of this broken off fragment into the medulla of each broken end you will be able to keep them from moving

laterally, and after all, that is what any apparatus does. Or, you may drive the sharp end of one fragment into the medulla of the other. You can then put on any kind of splint you please that will keep the limb from bending and get a perfect result.

Dr. Perkins, (closing): I wish to thank the gentlemen for discussing the paper so freely. Dr. Danna brought up two points both of which I think belong to the discussion of this subject. One is that in using a band you may obviate the interposition of the soft tissue, when a later operation would make this dangerous. That is a feature in this work in getting no soft tissue between the bone ends. The other point he emphasized is one I want to take up briefly. In using a Lane plate, a Parham plate, or wire or kangaroo tendon, I do not think any of these are of real value in preventing lateral displacement. Angulation of the bone must be prevented by a splint or by a heavy Lane plate. It is unsafe to use a Lane plate in long wounds which will stop the bone from moving laterally. Torsion and rotation are easily controlled by a splint in almost every kind of fracture work. Angulation can be controlled by splints. Any rigid material will control angulation. Overriding is simply a complication of lateral displacement. The hardest thing of all to control is the side motion. A splint can hardly do it well. It takes a tight splint for a femur to kick up laterally. That is what a piece of wire or Martin band or kangroo tendon or bone splint does.

With regard to the danger of the wire breaking, a good deal depends upon the quality of the wire which should be carefully selected. The technic of a particular sort is only the use of a method which has been perfected by hammering away at these details. We know that the Matas operation for aneurysm is a success practically, yet Antilles did the same operation, except Dr. Matas made it practically a modern thing.

The wire we buy in the stores is bad. The wire used in the Charity Hospital is bad for some of these cases of compound fractures. We should make bigger holes and use No. 14 gauge B and S silver wire. We have gradually selected bigger and bigger wire until it holds. The next thing is to have it flexible so that you can do anything with it you please and it should be easily removed. We always take ours out in 90 per cent of the cases. We get the wire annealed soft. We get No. 14 size annealed wire of large caliber so that it will not break.

As to the question of not wiring bone fragments, that is readily understood. I am not a wire fiend and I do not stick in silver wire in all these cases. You must exercise your judgment in the use of wire as in anything else. I have been hammering away at this subject for a good many years, and I am convinced that the general propositions laid down in the paper are either correct or I am not able to interpret such experience as I have had in the last twenty years.

CARDIOPTOSIS.*

By A. E. FOSSIER, A. M., M. D., New Orleans.

The ptosis of the heart is of comparative frequency and always found in patients presenting manifestations of Glenard's disease.

Its nomenclature is varied and it is usually found with the following synonyms: Drop heart, pendulous heart, the "cor mobile" of Chechewsky, cardioptosis, or the "Morbo di Rummo" of the Italians, the "wanderherz" of the Germans, and frequently the "bathycardia" of Mosse and Mendelshon.

Pick, in one thousand persons examined by him discovered in sixty per cent a movability of 1½ to 2 c. m. to the left. Einhorn in 926 patients—512 men and 414 women found twenty-two cases of cardioptosis, of which there were eighteen men and four women, a total per centage of 2.4, or about 3.5 per cent in the male and one per cent in the female. The reader has found the drop heart in greater frequency. In over three hundred cases he has found cardioptosis on an average of about 16 per cent, and again contrary to the accepted opinion less frequent in men than in women, about 10 per cent in the former and 22 per cent in the latter. All these cases were clearly defined and presented unquestionable physical and diagnostic signs of cardioptosis.

Thayer recently said: "The striking movability of the heart was not always appreciated. Misconception had often been based on a physical examination of the patient lying on the left side, with the resulting shifting of the apex impulse to a point well outside of the usual position. The change of position of the normal heart sometimes amounts to as much as a hand's breadth as the patient turned from side to side."

Lerch also says that a movable heart with apex beat outside of the mammary line, a systolic blow, an arhythymia, tachycardia or pseudoangina may immitate heart disease.

And also quoting Greene: That again contrary to current belief both drop heart and its chronic dilatations are extremely common, and indeed, should logically be anticipated in view of our present knowledge of the musculature of the heart.

Chechewsky, in 1887, was the first to demonstrate and determine the degree of lateral movability found in the normal and ptotical heart. He found a lateral movability of 4 to 7.5 c. m.

The etiology of cardioptosis is mooted, and clouded by many writers who at different times argued against the concomitance of

*Read at the 38th Annual Meeting, Louisiana State Medical Society, Alexandria, La., April 17, 18, 19, 1917.

a drop heart with ptosis of the abdominal organs. Two etiological factors are offered, one that it is the result of a general splanchnotoptic condition and the other a disease per-se, and the exclusion of outside influences due to changes in the thoracic and abdominal cavities.

Cardioptosis means the sagging of the heart from its normal position, with an increased mobility. The heart is maintained in position by various elements, the most prominent of which are its suspension by its great blood vessels, and its support by the diaphragm and by its pericardial ligaments. By resting upon the diaphragm the heart cannot drop unless there is a sagging of the phrenic muscle which is sustained by the upper limit of the liver and by proper abdominal pressure.

If that prop is taken away the heart will drop, otherwise it is bound to retain its proper position. Visceroptosis is absolutely the causative factor of cardioptosis, in other words it is a symptom of Glenard's disease. It is logical to hold that the pushing up of the diaphragm by an increased intra-abdominal pressure by pregnancy, ascites, tumors in abdominal cavities and well fitting corsets and abdominal bandages will raise the heart above its normal position, as a depressed state of the diaphragm caused by a lack of abdominal pressure as found in the enteroptotic habit will cause cardioptosis.

Glenard, Hammeter, Satterthwaite, Einhorn, Abrams, Greene, Lerch, and others claim that it is constantly associated with visceroptosis. The most prominent advocate of cardioptosis as a primary disease is Rummo and his school. He describes a type of this abnormality known as the Morbo di Rummo, in which the cardioptosis depends on the primary relaxation of the elastic support of the heart. That organ may not vary in size or weight but its supports are weakened and relaxed. As the vascular peduncles relax, the heart adapts itself by gravitating upon the diaphragm. The drop of the heart varies according to the tenacity of the phrenic muscle. Rummo further claims that the essential cause of cardioptosis must be a ugropatic condition, which means a congenital dystrophy of the elastic tissues. Yet he describes his cases as having long and flat thorax, long extremities, large intercostal spaces, stagnation of venous circulation and with general asthenia and all the nervous disturbances: all ear-marks of a general congenital visceroptosis.

He explains the emphysematous condition, so frequently found as an accompaniment to the drop heart, to relaxation of the air vesicles. The lungs are rich in elastic tissues and are readily affected in a ugropatic individual. Whilst this is possible it is highly improbable.

This very drop of the diaphragm increases the size and contents of the thorax at the expense of that of the abdominal cavity. Nature abhors a vacuum and the lungs must increase their volume in order to adapt themselves to the greater thoracic cavity.

In reality it is a pseudo-emphysema, the lungs are in a state of distention, and this condition is relieved by an increase of the abdominal pressure and the forcing upward of the diaphragm. We occasionally find drop hearts which must be classified as acquired. The conditions prevail in the obese as well as in the emaciated. Too rapid a reduction in weight either theraupeutical or pathological, without the proper safeguard of proportionately supporting and increasing the abdominal muscles, will cause a sagging of the belly and many times with it, the heart. It frequently follows confinement especially when the patient is discharged too soon after the delivery. In either case there is an hepaptosis and frequently a pantosis. It is sometimes observed in the young and robust, even in the athlete, when neither their efficiency nor their ability has in no wise been impaired to perform laborious work. Cardioptosis is always found in individuals presenting manisfestations of the habitus enteropticus. These patients, as a rule, are tall and slim, and usually poorly nourished. Inspection reveals, generally, a small head, long neck, and elongated, narrow and flat chest, prominent ribs and wide intercostal spaces with the subcostal angle very acute.

The epigastrium sunken and the belly pendulous and protruding. The abdominal muscles are frequently flabby or they may be thin and rigid with marked diastasis of the recti muscles. The veins of the abdomen are enlarged and plainly visible, showing marked venous congestion. The spine flattened and elongated.

A physical examination usually reveals the apex beat lowered, the line of both the relative and absolute dullness of the liver downward displaced, the stomach prolapsed, its lower curvature at or below the navel. The right or occasionally the left kidney may be palpated. The cecum, ascending or transverse or sigmoid flexure may be contracted or found gurgling on palpation.

These patients are in a state of general asthenia. They complain of great mental and physical weariness, even to inability to perform their usual work and an urgent desire for rest in the recumbent position.

Occasionally we find a presenility of mind and as well of body, the arteries are contracted and the arcus senilis present in early middle life. In these cases the blood pressure is low, ranging from 80 to 100 mm Hg. This is explained by Hirchfelder who claims that the traction and the pressure upon both the vena cavae and the arteries render both the inflow and outflow difficult, and this brings a high venous and a low arterial pressure. Greene also says that the blood pressure is seldom raised and usually remains below 100. Kraus and Herz called attention to cardioneurotic symptoms which occur in all narrow chested individuals. Lerch said that a premature contraction of the arteries often gives the impression of sclerosis, he thinks it is a defensive measure of nature "to assist the heart."

Murmurs are frequently heard in drop heart and disappear on position, they are auscultated sometimes in a reclining and sometimes in the standing position. They are in character functional, accidental, and may be due to relative insufficiency. These murmurs are commonly systolic over the apex, and they may be occasionally transmitted to the left. Unless the cor mobile is recognized and the heart fully mapped out errors are unavoidable. The reader reported similar cases at the 1910 meeting of this society.

Cardioptosis is the cause of many nervous disturbances of the heart, expressed in terms of cardioneurosis, neurasthenic heart, etc. The irritation of the terminal nerves of the myocardium and the great blood vessels, due to the continued tugging and pulling of these organs causes the attendant neurosis and functional disturbances. Precordial pains and oppression, anxiety, fear, dyspnea, palpitation, slow and rapid pulse, arhythymia, pseudoanginal attacks and epigastric pulsation are frequent symptoms of movable heart.

A movable heart is diagnosed by its location, shape and size, its relation to the diaphragm, and the flapping of that organ from side to side on change of posture. Its association with enteroptosis, and the build of the individual are of inestimable diagnostic value.

A correct technic of percussion and individual skill are amply

sufficient for the diagnosis of this condition. The X-ray is useful in the study of these cases, but its value is not near as great and its findings as accurate as we are led to believe by some authors. We must not lose sight that the advent of the rays has added but little to the knowledge of cardioptosis. We are indebted for its discovery and fundamentals to Cherchewsky, Glenard, Einhorn, Brown, Detterman, Pick, Rummo, Ferannini and others who reported the results of their observations before the advent or perfection of the Rœntgen rays.

Two typical and distinct types of movable heart are made out by percussion. One represents the heart as elongated and drawn out, the transverse diameter small and the vertical greatly increased, and in the other the heart is very small and round with narrowed and elongated blood vessels. These two types of cor mobile are confirmed both by the X-ray and percussion as illustrated by Shattuck and Lerch.

The movability is easily made out; the patient in a supine posture is made to rotate from right to left. The apex beat and borders of the heart are marked on the skin when he is on the back or lying on either sides. The space that the heart has traveled determines the amount of its movability. Normally the heart is situated obliquely in the chest and forms a vertical angle with the broad elliptic portion of the diaphragm which is horizontal and on which it rests. It is well supported by the phrenic muscles and laterally firmly imbedded between its domes which prevents any but the slightest movability.

The height of the diaphragm varies according to an increase or decrease of abdominal pressure. The basic principle of enteroptosis being a diminution of this pressure, this muscle drops, and the vertical diameter of the chest is proportionately increased. The heart loses this support and as it drops it rotates from left to right, its oblique position is changed to a vertical one, presenting a narrowed and elongated appearance. This cardiac imbedding between the domes of the diaphragm varies in health and in the drop heart, and its recognition is a cardinal point in the diagnosis of this condition. In normal cases the heart sinks below the plane of the highest point of the two diaphragmatic domes to the extent of not less than 2.5 c. m. to more than 4 c. m. corresponding to a third or a fourth of the vertical diameter of the heart at its center. In cardioptosis it is nearly always sunken to a depth of 1.5 to 2 c. m. about one quarter or a fifth of the vertical diameter. Nor-

mally the heart and liver make an adjacent angle, the vertex of which is formed by the heart resting on the diaphragm, and the sides by the cardiac wall and the hepatic line of absolute and relative dullness.

The lesser these angles the greater the stability of the heart. But the change from the oblique to the vertical cardiac position and the concomitant hepatosis causes a greater cardio-hepatic angle with corresponding movability of that organ.

The so called small heart of the enteroptotic and tubercular is usually the result of an increase of its vertical diameter at the expense of the transverse, and this relative small width is due more to its rotation on its axis than to its actual size.

It has been the privilege of the reader to observe a few cases after a year or more of treatment, and he invariably found the transverse diameter increased from 7 to 8 to 9 to 10 c. m. and the vertical diminished proportionately. Which results can be attributed to an increased abdominal pressure brought about by proper nutrition, exercise and a well fitted abdominal support.

DISCUSSION ON THE PAPER OF DR. FOSSIER.

Dr. A. B. Nelson, Shreveport: My first intimation that we can have a dropped heart occurred some years ago during a little X-ray work. We were making some X-ray pictures of the chest, studying the lungs, and my attention was called to it by the radiologist, and I have noticed it somewhat since, but not very much. This work being out of my line, I have not taken so much stock in that work. However it seems quite reasonable to me that where you have splanchnoptosis or the dropping of all organs, those of the abdomen particularly, the intra-abdominal pressure would be lessened and, in all probability, there would be a sinking of the diaphragm as the doctor has pointed out, and hence, dropping of the heart. I cannot reason it out in any other way. What disturbs me is the line of cases to which the doctor has referred in speaking of small heart. We know that the heart is not always regular in size, that it may hang higher. There is no reason why it should not be, so that one patient should have an abnormally small head, microcephalus, and why another individual should not have a small heart, and we might call that microcardia or something of that kind, but this heart may hang from the vessels, all of the weight of which would be on the vessels and on the ligaments, and not resting as it ordinarily does upon the diaphragm, because it would be hardly long enough to reach the diaphragm, as it normally does. All of this weight would be upon the vessels and would cause them to lengthen more or less.

As to the symptoms coming from the heart, I do not agree with the essayist. In my opinion it is a symptom complex of this visceroptosis and the natural absorption of the toxins which accompanies all of these conditions of splanchnoptosis.

As to whether there is a change in the heart muscle it would probably depend upon this condition—I mean upon the absorption of the toxins and the general debility of the patient; and a change in connective tissue in the heart and the musculature of the heart would all depend I think upon the visceroptosis, and the resulting symptoms would come from that and not necessarily from the heart itself.

As to the use of the X-ray in connection with this work, I have found that I have to depend upon it for my diagnosis in these cases largely, for any other finer points. I do not see why the X-ray would not outline this condition if it is properly applied. I think it would, because if we take an X-ray picture at a certain distance from the body, each time you will get a regular picture. If you got further away, and took one picture at six inches from the patient's body and the next time another picture eight or ten inches, you could not tell anything about it. I believe you get an accurate picture by being accurate, and I would have to depend upon that anyway.

Furthermore, I believe that this disease occurs oftener in women than in men, because we find visceroptosis more frequently in women.

I would like to hear other members of the Society express themselves on this subject.

Dr. Sidney K. Simon, New Orleans: We have all noticed in cases of congenital visceroptosis the fact that, as a general rule, the apex beat of the heart is displaced downward to the left, a condition that ordinarily would suggest enlargement of the heart. I have always felt that the explanation of that was the peculiar deformity of the thorax we find in these cases of visceroptosis, which was described by Stiller, of Prague, and known as the Stiller thorax with a very narrow epigastric angle from the long wing thorax. In other words, enlargement of the thorax cavity at the expense of the abdominal cavity. It is because of that mechanical defect these people, when they come into the world, show displacements of the kidneys, of the stomach, and even of the spleen, and at times even of the liver. The apparent displacement of the heart in those cases has seemed to me to be merely what you might call a defect, pure and simple, without being an actual displacement of the heart. If the heart is down because the chest wall is compressed at its lower axis, the thoracic wall is squeezed. That is the appearance it has because of the narrow epigastric angle.

I believe that to dignify cardioptosis as a clinical entity is wrong. I believe that we doctors should consider visceroptosis or Glenard's disease; we should call it Glenard's disease as a general clinical condition; that we should not pick out any particular organ for special mention. I believe we ought to get away from that. We are gradually getting away from it, and I do not believe the practice of anchoring kidneys is done anywhere near as frequently today as it was formerly. Practitioners consider visceroptosis as a general diseased state and deformity of the abdomen should be treated along general lines and not individualized on any particular organ that happens to be ptotic.

Another point we should remember is that the heart might happen to be at a lower insertion than it normally is. I do not know of anything more important in the neurotic type of individual with which we are dealing in this condition than this, knowing that would tend to make the general condition or the mental state of the individual worse than

to call attention to a displaced heart. The laity cannot grasp its true and essential meaning.

As to the symptoms Dr. Fossier brought out, I believe we all recognize the symptoms as we analyze them and find them in connection with Glenard's disease, whether it is a ptosed kidney or stomach, or transverse colon or a ptosed heart. I believe the symptom group remains the same; we have the same type of general neurosis, the same disturbances of the abdominal organs and a general neurosis.

Dr. Adolph Henriques, New Orleans: Dr. Fossier spoke of the increased volume of the lungs as a result of the lowered diaphragm. If we have an increase of the lung volume, one would conclude from that increase there would be an increase in function. As a matter of fact, in many of these cases the excursion of the diaphragm is very much limited. Ordinarily, we see an excursion of two and a half inches; in some of these ptosis cases it may be as little as an inch, and in still others it is scarcely perceptible. I have noted an interesting fact connected with this, namely, by increasing the intra-abdominal pressure, simply by laying the hand at right angles to the abdomen and making a little pressure at right angles to the long axis of the body we can raise the diaphragm considerably, often more than an inch, and in spite of this increased height there is an increased excursion of the diaphragm, permitting thereby increased ventilation of the lung. It has been my observation from the use of the X-ray that we find this ptosis of the heart very frequently without any symptoms at all in the course of a routine examination. This subject was discussed pro and con some time ago by X-ray men, and the almost unanimous opinion was reached that it did not make any difference where an organ was so long as it performed its functions properly. Occasionally these cases do present symptoms.

I want to take exception to the doctor's statement as to the X-ray not adding much to our knowledge of the position of the heart. Dr. Bel and I had the pleasure of undertaking some observations in common as to the alterations in position of the heart due to alteration in the positions of the body. We found that by changing from the right lateral to the left lateral position the heart would move as much as an inch and a half or an inch and three-quarters from side to side. We found that in changing from the prone to the supine posture the borders of the heart would move as much as half an inch. In changing from the erect to the recumbent position the diaphragm and also the heart would move upward, the apex moving towards the left. Contrary to Dr. Fossier's view in these cases of cardioptosis we never see the apex displaced to the left unless there is some hypertrophy associated with disease of the heart; the apex is always more to the median line.

A very interesting observation as to the effect of respiration on displacement of the heart was made. We found that in an individual with a marked excursion of the diaphragm the apex moved as much as four inches from extreme inspiration to extreme expiration. I was much surprised to make that observation. I do not believe we can percuss out the outlines of the heart accurately after a deep expiration on the part of the patient, the patient maintaining the expiration during the percussion.

A Member: I would like to ask the essayist or any member of the

Society if he has ever seen a case of pure ptosis of one organ alone? Is it ever possible to have ptosis of one organ aside from hernia?

Dr. Adolph Henriques, New Orleans: It is quite possible to have it, although a ptosis of several organs is more frequent.

Dr. Fossier (closing) With reference to the remarks of Dr. Nelson, hearts vary in size according to the size of the individual. Some have small whilst others have large hearts. Whenever we find an individual with a small heart, it is generally associated with diseases of mal nutrition and tuberculosis. These small hearts are found in men as well as women. They have elongated, narrowed and flattened chests, prominent ribs and wide intercostal spaces with very acute subcostal angle. They are all neurotics and sufferers of Glenard's Disease. I have observed small heart in another type of individual, especially in women with a badly nourished upper portion of chest. The face is drawn, the chest is thin, and there is a marked lack of development of the breast, but they have large hips and legs. In other words they have a badly nourished upper extremity and an over developed lower portion of the body. I wish it to be distinctly and thoroughly understood that I do not depreciate the use of the X-rays, but only wish to emphasize that we cannot send all our cases with drop hearts to radiologists. Clinicians should diagnose these conditions without the help of the X-ray expert.

The X-ray observations of Drs. Henriques and Bel as to cardiac mobility are arguments that percussion is amply sufficient to make a diagnosis in this condition, for the doctors have confirmed with the rays the observations of men who had reported the results of their experience before the discovery and perfection of the Rœntgen rays.

In answer to Dr. Simon I will state that generally the symptoms of Glenard's Disease do not depend on any particular organ, but on the ptotical condition of many or of all the abdominal organs, yet not infrequently we do observe symptoms that can only be attributed to a particular organ or a group of organs, i. e., cardiac symptoms in cardioptosis, Dietl's crisis, etc.

ORAL PROPHYLAXIS AT THE SCHOOL AGE.*

By HAIDÉE WEEKS GUTHRIE, D. D. S., New Orleans.

In Strasburg, in 1902, was established the first free dental clinic. In five years there were 90,017 children given free treatment at a cost to the City of 7 c. each for examination and extraction and 25 c. each for treatment and filling. This clinic is now conducted in a $60,000 building owned by the state. Germany has now two hundred dental school clinics; London has only seven dental school clinics and the conditions are even worse there than in the United States. Mexico has established free dental school clinics. The

* Read, by invitation, before the Orleans Parish Medical Society, June 11, 1917. [Received for publication July 9, 1917.—Eds.]

first free dental school clinic in this country was established in Rochester, N. Y. in 1905. New York City had five free dental clinics in 1914. They were supported at first by the dental societies and philanthropic organizations. Now, however, for the current expenses the municipal government sets aside $29,000 yearly for maintenance.

The first clinic exclusively for school children in New York City cost for the treatment of each child including equipment, $4.10. In New York City the cost of educating the child is estimated at $40.00 per year. One school was taken as a fair criterion of the general conditions, the number of absentees due to toothache and other mouth troubles of dental origin was recorded. Here were found absentees receiving dental care, 38 per cent; absentees not receiving dental care, 94 per cent. It is estimated that in New York City, 80 per cent of the absentees is due to aching teeth or illness therefrom. If the same rate obtains throughout the year the loss of money to the City equals an enormous sum. The Russell Sage Foundation Fund reported that among 7,608 children examined, children with defective teeth progressed 6 per cent more slowly than normal children.

In New York, where 700,000 school children are given daily tooth brush drill, all between the ages of six and eight years are kept under constant dental supervision at public expense. This move resulted after the Department of Health discovered, as a result of a dental survey, that nine out of every ten children in the City Schools had defective teeth. The same ratio probably holds good in most other cities.

These facts point to a national need for mouth betterment. Fortunately it is a matter which the individual can easily and cheaply control, if the habit of use of a tooth brush be formed early enough in life.

The survey in the New York Public Schools revealed the following after a thorough examination of the oral cavity: Of one thousand six hundred and seventy-eight children examined between the ages of five and fifteen years, 164 had healthy gums, four hundred and twenty-nine had healthy gums but decayed teeth, six hundred forty-nine had diseased gums, 35 per cent of the children between five and seven years, showed the presence of disease germs in the mouth, 60 per cent between five and fifteen years showed the same condition.

In another examination of two thousand persons for physical defects, that could be cured before culminating in definite disease, the physicians of the American Museum of Safety of New York, found that 25 per cent of the two thousand cases were affected with pyorrhea and dental defects unsuspected by the afflicted persons. Other group examinations by physicians doing welfare work have revealed the same and sometimes a higher percentage of affections of the mouth. This emphasizes the need of periodic examination of the oral cavity as a preventive against disease.

A report from Dr. R. Ottolengui of the Brooklyn Public Schools for 1913 shows the average service rendered each child in round numbers as follows:

Permanent teeth extracted	1
Temporary teeth extracted	1
Fillings	6
Root treatment	1
Teeth cleaned	1

In addition frequent prophylactic treatment.

Tabulated the results follow:

Average increase per child—

Studies	10%
Deportment	14%
Attendance	12%
Mal-nutrition cases cured or improved	95%
Repeaters	30%

In Chicago the work of caring for the neglected teeth of poor children is on a permanent basis. Dental infirmaries located in public school buildings and equipped by dental supply houses and by private endowments are maintained. Examination of fully 300,000 showed about 95 per cent in need of dental service. An endowment of $10,000 a year for ten additional infirmaries and salaries, until such time as the City can be induced to take on the work has been given by Mr. Julius Rosenwald, a public spirited citizen.

One of Chicago's experience in dental clinic work will appeal especially to the medical profession. During the epidemic of scarlet fever those affected were, of course, sent away from school, quarantined, all usual precautions taken, and the children were not allowed to return until clinically well. This return to school was followed by a fresh outbreak of the disease, the cause of which could not be determined for a long time. After enforcing a regulation compelling each child to have his mouth thoroughly

cleansed, and every cavity filled, before returning to school, the epidemic was stopped.

St. Vincent's Orphan Asylum, Boston, Mass., during 1905-6 was in quarantine for three months on account of contagious disease. In the year preceding the establishment of the dental clinic there were over one hundred cases of contagious disease. In six months the number diminished 50 per cent and the subsequent year, after establishing the dental clinic, to 2 per cent.

Boston has the Forsyth Dental Infirmary with an endowment of $2,000,000; Rochester, N. Y. has a similar institution, also the gift of public spirited citizens, Mr. Geo. Eastman, Capt. Henry Lomb and Mr. William Bausch.

In Cleveland, Ohio, 97 per cent of the children were found to have defective mouths. In the undertaking of this research, 27 children having the greatest number of oral defects were chosen in a school of 846. After treatment these showed an increase of 99.8 per cent in efficiency for school work. This was due to the correction of oral defects and to proper care and use of the mouth. The moral and physical improvement was as marked as the mental uplift. At the close of the arithmetic lesson each day 60,000 school children of Cleveland Public Schools lay down their pencils, pick up their tooth brushes, and spend five minutes in cleaning their teeth. In Cleveland a general inspection of one school (Marion) was made by ten dentists and out of eight hundred forty-six children examined, only three were found whose oral condition was perfect. The improvement in efficiency was startling to the prinicpal who expressed herself as follows:

> "Undoubted proof was established that by keeping the teeth in perfect condition, by living up to the laws of oral hygiene, these twenty-seven children doubled their mental ability, gained in power and endurance and bodily strength, and showed marked improvement in personal appearance and habits. A physical, mental and moral gain in the child produces an economic and financial gain to the community. Can any one question that a practical, working knowledge of oral hygiene is worth while?"

In Detroit, and Muskegon, Michigan, the result of dental inspection and treatment has brought about noticeable change in the school work of the heretofore backward children—"the cost, that is, money value saved as represented by non-promotion, far exceeded the expense of the clinic."

The second annual report of the Dental Commission of Bridgeport, Connecticut, is as follows:

From September, 1915 to June 21, 1916.

Corps comprises fourteen dental hygienists, two supervisors and a woman dentist, in 1916 an additional hygienist was appointed.

Phophylactic treatments given. . .	10,990
Children receiving one treatment	20,850
Children receiving two or more treatments	1,890
Children attending stereopticon lectures	9,100
Children receiving tooth brush drills	18,000
Tooth brushes sold in school	5,150

International Congress on School Hygiene, Sept. 14, pp. 772, has the following to say:

"Repeaters"—Children who cannot keep up with their grades are called "repeaters." There are about 3,000,000 such children in the United States and it costs about $1,000,000,000 to educate or try to educate them. A very large majority of these 3,000,000 children can be kept from repeating by relieving them of their physical defects or disease. All repeating children are a detriment to everybody in the school room, and they should either be cured of repeating or be placed in separate schools. They frequently hold back an entire class. The teacher has either to neglect the balance of the class for their benefit or the progressive scholars are taught at the expense of the laggard."

The annual report of the Toronto Dental Clinics shows a steady reduction in the number of pupils suffering from dental defects. Just previous to the establishment of the school clinics, 95 per cent were affected with dental defects. In 1915, examination of eighty-six schools showed the percentage of children with dental defects had been reduced to 65 per cent. The percentage covering all the schools in the City has been actually reduced to 51 per cent; forty-nine children in one hundred are absolutely free from dental defects, exclusive of cases of irregularity of teeth.

In 1916—

Children relieved from toothache	2,345
Number of completed cases	5,730
Total number of operations	14,730

In the Kingsley House settlement there are 941 children. All of these have been brought to my clinic at the Woman's Dispensary during the last three years. Besides these children there are many others who live in the densely populated district in which the Dispensary is located and numbers who come from a distance. Most

of these children attend the public schools and many, the parochial schools. I have had the opportunity to watch the mouths of these children during three years and have kept careful records of all the cases treated or examined.

My own records show 99 per cent of these children have defective teeth; 80 per cent show decay of permanent teeth; 40 per cent between seven and nine years had lost their first molars—the most important tooth in the mouth; 98 per cent did not own a tooth brush.

The clinic is for the poor, without regard to race, creed or color. A child who receives a service at the clinic is provided with a tooth brush. If, at a future time, he presents himself for further work and has not used the brush, he is refused admission for the time being.

The mouths are in a relatively aseptic condition and all cavities filled when dismissed. Each child has been lectured that "clean teeth do not decay" and minute instructions as to how to brush the teeth given so there is no further cause for an unclean mouth. Once a month, in squads of twenty, a tooth brush drill to music is given.

My own statistics compiled from these records are as follows:

From April, 1916 to May, 1917.

Total number of patients examined and completed	784
Total number of scalings	750
Total number of treatments	635
Total number of amalgam fillings	236
Total number of cement and gutta percha	800
Total number of deciduous teeth extracted	1,300
Total number of permanent teeth	650
Total number of abscesses with sinus	687
Total number of necrosed bone	252
Total number of impacted 3rd molars	19
Total number of Hutchinson teeth	21
Total number of exostosis	4
Total number of porcelain teeth	11
Total number of perfect mouths	8
Total number of Wassermans made	37
Total number of microscopic examinations	265
Total number of radiographs	55
Total number of orthodontia	35

The comparison of statistical findings of my own records with those of New York, Chicago, Cincinnati, Bridgeport, seems to justify the conclusion that age for age there is a higher percentage

of diseased conditions due to oral infections here than in the above named cities. A possible explanation of this may be the fact of the earlier eruption (eight to twelve months) here than in more northern regions. This I have also been able to establish in the analysis of my records.

If the procedures of dental hygiene are intensely applied from the kindergarten through the third grade, there is very little need for reparative work during later years of childhood.

In examining the records available, the lowest co-efficient of improvement found was in the case of New York. Here the improvement was 35 per cent. Cleveland showed 98 per cent, Toronto, 65 per cent, Chicago, 40 per cent—we are justified in expecting in New Orleans, at least a 33 1/3 per cent improvement.

In the public schools of New Orleans during the session of 1914-15, it was found that 15 per cent of the boys and 13 per cent of the girls were repeaters, a total of about 4,000. The annual cost of educating a child is $31.89 based on a daily per capita expense of 19.2 cents. The aggregate cost of caring for the repeaters in the schools of New Orleans is, on the above basis, $127,560.00. At least 33 1/3 per cent of the unnecessary expense of carrying repeaters could be saved in the New Orleans Public Schools through the institution of dental clinics. This makes a startling total of $42,500 a year. This saving could be accomplished at a total cost of $3.00 per capita for the first year of operation, including cost of initial equipment. We should, therefore, be able to accomplish a net saving to the school fund of $30,500 for the first year.

The medical world has for a number of years concerned itself with carriers of the bacilli of diphtheria and of typhoid fever. In the light of our knowledge of the bacterial flora of the mouth, persons with carious teeth or suppuration must be also considered as probable carriers of pathogenic organisms, with streptococci and pneumococci taking the first rank. Hence there is involved a double problem in prophylaxis. First a protection of his own organs against bacterial invasion or damage from toxins, second, protection of other individuals against a strain of foreign organisms.

The removal of focal infections is the keynote to modern prophylaxis. Surely it is still better prophylaxis to institute a scheme that shall avoid altogether a very large number of focal infections.

Medical inspection of the schools has won its place among public health measures. No scheme of medical inspection can be complete which does not include a system of regular inspection of the teeth and some effort to put the child in the way of having defects remedied. The preservation of the man power of the nation demands all safe-guards for the child. Let us hope that the needs for the millions of recruits who shall have opposing molars will not always be the motive toward prophylaxis. However, it takes opposing molars to work as well as to fight.

If the plea for greater efficiency is not heard or heeded, perhaps the plea for four opposing molars may move the nation to action in this direction.

MEETING AMERICAN MEDICAL ASSOCIATION.*

By P. B. SALATICH, M. D., New Orleans.

The opening meeting of the Sixty-eighth Annual Session of the American Medical Association, in New York City, June 4 to 8, 1917, was held in the grand ball room of the Waldorf Astoria Hotel at 8:15 P. M.

The meeting was called to order by the President, Dr. Rupert Blue, who introduced Dr. Wendell C. Phillips, Chairman of the Committee on arrangements. He made several announcements relative to the session and then spoke of the death line in New York City. He said there was no death line in New York as in Baltimore and to corroborate his statement he introduced Dr. Smith, a well preserved, active and erect specimen of only 95 years. Sitting next to Dr. Smith was Dr. Abraham Jacobi, another youth of 85. Dr. Jacobi was not in Dr. Smith's class; he seemed older than his almost centenarian friend.

Dr. Alexander Lambert, President of the Medical Society of the State of New York was next introduced. He welcomed the members in behalf of the State of New York.

The Academy of Medicine of New York welcomed the members through its President, Dr. Walter B. James.

The President elect, Dr. Charles H. Mayo was then introduced

*Read before the Orleans Parish Medical Society, July 9, 1917. [Received for publication July 19, 1917.]

and installed. He prefaced his remarks by saying that the war occupied such a prominent position now that it would be out of place if he did not say something about it. He spoke on preparedness and said it would not be necessary to draft doctors he thought, and felt sure there would be enough volunteers. He said what should be practiced now was tongue control more than birth control. He ended by thanking the association for having elected him to the presidency of the greatest medical society in the world. The opening meeting then adjourned.

The Section on Obstetrics, Gynecology and Abdominal Surgery met in the Astor Gallery of the Waldorf-Astoria.

The chairman, Dr. H. W. Longyear of Detroit opened the session; his address was The Relations of the Gynecologist to the General Surgeon, Past and Present.

The next paper was by C. Henry Davis of Chicago. This paper was on the Relative Efficiency and Toxicity of Chloroform, Ether and Nitrous Oxid-Oxygen in Pregnancy and Labor. His paper and the discussions came to the following conclusions:—Chloroform for periods of short intervals and to divert the attention of the patient. Nitrous oxide during the second stage and ether for long procedures, such as forceps, etc. It was also concluded that ether was the safest anesthetic in toxic cases, especially in cases of liver involvement.

The next paper was the Pathological and Clinical Significance of Chronic Endo-cervicitis by Dr. Arnold Sturmdorf of New York. He brought out his operation which consists of a double flap of the vagina; he then removes the Cervical canal in a wedge shape and sutures the flaps on anterior and posterior to the cervical canal at the internal os. The treatment by the cautery was discussed and several men condemned it on account of the scarring resulting after this method.

The next paper was by Dr. J. Osborne Polak of Brooklyn. Why the Menstrual Function should be Preserved in Double Suppurative Diseases of the Tubes. The doctor described an operation in which he removes the uterus including the cervix but preserving the sides of the uterus so as not to disturb the circulation of the ovaries. In spite of the entire uterus being removed including the mucous membrane of the uterus, these patients menstruated regularly. Where this menstruation comes from, this was not brought out. Some thought from the cervix, others from the top of the

vagina. Dr. Polak said ovulation without menstruation is valueless from a psychological standpoint. A conserved ovary with a disturbed circulation has a short-lived function.

A symposium was then held on the influence of Labor in the Brain Development of the Child, by Dr. Arthur Stein. This subject was freely discussed, some advocated opening the skull immediately after delivery for pressure symptom. The conclusions were that the pregnant woman should be carefully studied before delivery and every means taken to assist a prolonged second stage, where the danger of pressure and resulting pressure symptom resulting after delivery.

The next paper in this section not being very interesting, I attended the Surgical Section. Dr. William O. Sherrman of Pittsburg read a very interesting paper, especially at this time, on the Abortive Treatment of Infection. He showed several pictures, lantern slides and motion pictures to demonstrate that this method of treating was a positive and not imaginary method. The following technic as gathered by the speaker and other men who have used the method at the front, was as follows: When a patient is brought to the hospital, his wound is thoroughly cleansed and this must be done in the strictest sense of the word. All foreign substances must be removed, and any dead or hanging tissues removed just as if you were preparing to do a laparotomy. All this must be done if possible with instruments and keeping the fingers out of the wound. The plain tubes are introduced, to the bottom especially in the upper angle of the wound. These tubes are made by tying off the ends of the tubes and using a punch to puncture several very minute holes in the ends of the tubes. Several of these tubes are laid at the bottom of the wound. Then if you want to place some on the surface, the same kind of tube is used but the ends are wrapped with toweling material so as to keep them from slipping. Vaseline (yellow) is now freely smeared around the outside of the wound and then covered with gauze. This must be done with care for the chlorine fumes in Carrel's solution is very irritating to the tissues. A light dressing is then placed around the top of the wound and limb and either a French dressing, which consists of a one piece bandage laced or few rolls of bandage. The solution is allowed to run in for two hours then stopped for two hours. This must be used as a gentle spray on the tissues and not as a drip. In twenty-four hours the

dressings are removed with forceps and the wound thoroughly rubbed so as to cleanse the surface thoroughly. The tubes are either changed or sterilized and the same method as above described carried out. Each day before washing the wound a smear is made of the secretion and when the smears show only one organism in 5 or 10 fields the wound is then ready to suture. It is surprising how small the granulations are by this method and how quickly they formed and how little bleeding is attended in vigorously rubbing of the granulating surface.

The scars in these cases are very small as compared to other infected scars. Fractures heal twice as fast with this treatment. The discussions were many and the authors together with other men reported of septic abortion and puerperal sepsis, appendicitis, liver abscesses treated by the Carrel method. Dr. Sherrman has devised a vaginal apparatus to be used in cases of sepsis uteri. This can be purchased from Harvey R. Pierce of Philadelphia.

The next paper of interest at the Obstetrical and Gynecology session was a paper by Drs. Guy L. Hunner and George L. Stickney of Baltimore. Their paper was on Further notes on a Rare Type of Bladder Ulcer with Report of Eighteen Cases. This was a very interesting paper. It dealt with those cases of bladder trouble, giving the following symptoms: Painful micturition, pain in lower abdomen and on pressure. Examination of the urine shows no pathology and the patients are often operated for all kinds of pelvic or other lesions, without relief. Cystoscopic examination is often misleading. If very careful search is made, one or more small ulcers are found at the vertex or free portion of the bladder. On opening the abdomen and exposing the bladder you are surprised to find almost the entire bladder thickened and the only operation is to remove the entire infiltrated area, which often comprises the entire free portion of the bladder. After the operation the bladder is only large enough to admit the finger, but this soon stretches and in the author's cases, after a month's time patients could hold several ounces of urine in her bladder, and quite often not need to get up at night to void. This, the author claims, is the only means of curing these troublesome cases.

Ovarian Organotherapy was described by Dr. William P. Graves of Boston. The paper dealt with the use of the whole ovary instead of the corpus-luteum. Several reported good results with the corpus-luteum alone and claimed that the reason better results

were not obtained was because it was not used in large enough amounts.

Dr. Robert E. Farr of Minneapolis read a paper on the Technic and Scope of Local Anesthesia in Abdominal Surgery. The point of interest in this paper was an apparatus devised by the author in which he forces compressed air in cylinder and has these connected with rubber tubing and a device by which he can control the injection of the solution. This apparatus does away with hypodermic syringe and diminishes the time necessary to anesthetize a region.

Several papers were read on Cholecystostomy and Cholecystectomy. It seemed to be an even draw between Cholecystostomy and Cholecystomy; probably a small majority for the latter.

The old familiar subject Colectomy was discussed. A paper was read by Dr. Charles A. L. Read of Cincinnati entitled Physiologic Colectomy.

Dr. Charles Mayo read a paper for Dr. William J. Mayo on Diverticulitis of the Large Intestine. He mentioned four groups (1) Left side inflammatory symptoms with tumor; spontaneous disappearance, occasional relapse. (2) Peritonitis, abscess, etc., resulting in secondary fistulas to the surface interintestines but most common into the bladder. (3) Diverticulitis with chronic thickening simulating malignant disease and obstruction. (4) Carcinomatous development on diverticula.

Dr. J. Walter Vaughn of Detroit read a very interesting paper which might prove a very valuable assistance in determining metastosis in malignant growth. His paper was entitled "When is Cancer Operable?" He showed by experiment an immune mechanism located in the spleen. His experiments deal especially with the variation in the number of polymorphonuclear neutrophiles. If metastasis is taking place there is an increase of these cells and he is attempting to prove whether the case has resulted in metastasis at the time of the operation, by this method.

Dr. James F. Percy of Salesburg, Ill., read a paper on the End Result of the Treatment of Inoperable Uterine Cancer by Heat. It would appear at the discussion as if the European war had been transferred to the hall judging from the pros and cons for low heat and white or lead heat or no heat at all.

Dr. Henry Schmitz of Chicago read a paper on The Present Status of Radium Therapy in Diseases of Women. He concluded

that radium acts very well in metrorrhagic cases and said, depending on the dose he could control ovulation and further menstruation, reporting a case of impregnation occuring six months after small doses of radium had been used. For fibroids, especially intramural fibroids, a high percentage was cured. He did not advise it in the subperitoneal polypi variety. He claimed he got as good results with radium as he did with the Percy low heat method.

The election of Dr. Brooke M. Anspech of Philadelphia this year's Secretary to the Chairmanship for next year ended the session.

On Thursday at 8:15 the third evening of the session, a Patriotic Rally was tendered to the visiting members, which was held at the Hippodrome and given by the local committee on arrangements. Dr. Wendell Philips, Chairman, Dr. Floyd M. Crandall, Secretary, and Dr. Alexander Lambert, Treasurer. The place was crowded to its capacity. The address of welcome was by Hon. John Purroy Mitchel, Mayor of New York.

An address was delivered by Hon. Dudley Field Malone and George E. Vincent.

Dr. Lambert then introduced Col. Theodore Roosevelt. He started his remarks by saying, "I am here tonight to speak to you but wish it was so that you could not hear my voice." Once or twice he turned to Dr. Lambert and said something to him telling the audience this is about the only chance I get to bull Dr. Lambert, you know he is my family physician and generally I get it from him. He spoke about the Liberty Loan and preparedness. He said we were always too anxious to say we belong to a big nation and rest there. Tonight we are not hearing what France and England are going to do but what they have done. The time has passed for us to talk, we should act now and let others talk about it. He spoke about the noble work the American doctors were doing on the other side and he felt sure there would be more doctors volunteering than were needed. He spoke of the duties of the farmer to his country.

He ended his remarks with his characteristic smile and hearty welcome to the doctors of the American Medical Association.

Madame Frances Alda assisted by the Metropolitan Opera Chorus sang the Star Spangled Banner, and may it always live. This then brought the rally to a close.

Having had the pleasure of attending the International Cong-

ress of Medicine in London, in August, 1912 and comparing the meeting of the American Medical Association, I would conclude that as far as original papers, attendance and knowledge gained, the latter has certainly been of decided interest and benefit to me and I think more of us should strive to attend these meetings and have a larger representation from the metropolis of the South.

VACCIN TREATMENT OF WHOOPING COUGH.*

(Additional Observations.)

By CHARLES J. BLOOM, B. Sc., M. D., New Orleans.

This article is written with the hope of attempting to alter erroneous impressions, faulty conclusions, and mis-applied therapy in the treatment of this important disease.

Unfortunately for both concerned, the physician and the patient consider the question of pertussis as trivial—the former prescribes negatively and creates in the mind of the latter a false delusion, namely that whooping cough cures itself and does not respond to active treatment.

The results of this false premise are best told in statistics compiled by the Board of Health of New Orleans.

Chart No. 1.

COMMUNICABLE DISEASES.

NUMBER OF CASES.

	1910.	1911.	1912.	1913.	1914.	1915.	1916.
Diphtheria	608	386	1072	1249	1679	1833	....
Scarlatina	992	594	352	137	147	70	100
Smallpox	537	207	212	31	21	72	193
Typhoid fever	405	441	261	206	312	234	374
Measles	2556	2347	324	4657	677	353	3191
Whooping cough	*	*	83	109	278	177	141

*Not reportable.

Chart No. 2.

COMMUNICABLE DISEASES.

NUMBER AND PER CENT OF DEATHS.

	1910.	1911.	1912.	1913.	1914.	1915.	1916.
Diphtheria	37— 6%	25—6.4%	58—5.4%	112—8.9%	112—6.7%	112—6.1%	....
Scarlatina	28— 3%	4— .6%	9—2.5%	2—1.4%	2—1.3%	2—2.8%	1— .1%
Smallpox	2— 4%	2— .9%	0— .0%	2—6.4%	0— .0%	5—6.9%	4— .2%
Typhoid fever	107—26%	106—24%	49—18%	60—28%	78—21%	79—33%	87—20%
Measles	72— 2.8%	40— 1.7%	2— .6%	36— .7%	8—1.0%	3— .8%	12— .3%
Whooping cough	*	*	6—5.5%	12—11%	16—5.7%	19—10%	12—8.4%
			Average five years..... 8.1%				

* Not reportable.

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*Read before the Orleans Parish Medical Society, July 9, 1917. [Received for publication July 19, 1917.]

DEATHS FROM PROMINENT CAUSES—1884-1913—NEW ORLEANS.

Years.	Smallpox	Diphtheria and Croup	Typhoid Fever	Whooping Cough	Measles	Scarlet Fever
1884.	292	155	56	46	149	27
1885.	1	230	38	42	29	42
1886.	...	145	30	14	1	5
1887.	...	226	34	11	19	1
1888.	...	355	46	59	2	9
1889.	...	171	41	13	20	5
1890.	...	136	50	26	37	5
1891.	...	109	59	9	49	3
1892.	...	116	51	29	7	1
1893.	...	126	39	20	1	1
1894.	2	158	76	28	5	1
1895.	56	99	113	22	57	5
1896.	238	53	90	32	10	1
1897.	1	45	141	2	1	1
1898.	...	15	184	45	...	1
1899.	6	19	155	20	17	3
1900.	448	36	114	8	57	19
1901.	52	41	141	22	1	62
1902.	4	44	135	14	1	14
1903.	4	35	119	27	2	8
1904.	...	45	111	12	33	2
1905.	6	42	101	34	...	8
1906.	8	46	95	20	4	14
1907.	10	37	179	51	71	4
1908.	9	48	108	30	14	25
1909.	...	25	96	17	2	62
1910.	2	38	107	17	72	28
1911.	2	25	106	112	40	4
1912.	...	58	49	8	2	10
1913.	2	112	60	12	36	2
	1143	2790	2724	802	739	373

A careful study of these data will evidence several important facts, namely:

1. In twenty-eight years, eight hundred and fifty-five children have died from whooping cough.

2. During the past five years the mortality has averaged 8.1 per cent.

3. The death rate from whooping cough during the past five years has been two per cent greater than diphtheria, seven per cent greater than measles and six per cent greater than scarlatina.

4. In actual number of deaths the mortality from whooping cough for twenty-five years as compared with measles, 802-739; as compared with scarlatina, 802-373.

These conclusions should be most convincing to those whose ideas are fixed, and at the same time have the individuality of not responding to a progressive medicine environment.

In the way of an introductory statement, the writer brought to the attention of this society the beneficial results obtained from said treatment in June, 1916.

It is understood that no one is claiming that vaccin therapy is a panacea for the cure of all cases; but the evidences obtained during a period of thirty months should be interesting to say the least,

This series consists of forty cases, thirty treated with the vaccin for active cases, six with the vaccin in the way of prophylaxis and four with the whooping cough phylacogen.

Twenty-six additional cases were treated but the necessary statistics were wanting, causing me to omit same from this paper.

REACTION.

With the administration of large doses for active cases there was a rise in temperature as high as 101° for the first two or three doses in 4 per cent of the cases; in the cases treated with whooping cough phylacogen each one experienced a rise of temperature after the individual injections were given.

Another point of interest, on the same night when the vaccines were given the patients would be somewhat more restless than previously and practically every case would register additional coughing spells than the night before, but after one week these two factors would be negative.

Vaccin.

The mixed vaccins employed in the first fifteen cases were on the following basis:

Bordet-Gengou bacilli. . . .	50,000,000
Staphylococci pyogenes aureus	10,000,000
Micrococci catarrhalis. . . .	20,000,000
Bacilli influenzæ. . . .	20,000,000
Streptococci pyogenes. . . .	20,000,000

The quantities used in this series, and number of injections, are as follows:

Case.	Amount Mixed Vaccin equals					
No. 1.....	500,000,000	Number of injections equals				5
No. 2.....	660,000,000	"	"	"	"	7
No. 3.....	624,000,000	"	"	"	"	7
No. 4.....1,268,000,000		"	"	"	"	12
No. 5.....	596,000,000	"	"	"	"	7
No. 6.....	540,000,000	"	"	"	"	6
No. 7.....	500,000,000	"	"	"	"	5
No. 8.....	900,000,000	"	"	"	"	6
No. 9.....	974,000,000	"	"	"	"	11
No. 10.....	766,000,000	"	"	"	"	9
No. 11.....	761,000,000	"	"	"	"	10
No. 12.....	602,000,000	"	"	"	"	7
No. 13.....	750,000,000	"	"	"	"	9
No. 14.....	870,000,000	"	"	"	"	11
No. 15.....1,050,000,000		"	"	"	"	12
Average	760,000,000	"	"	"	"	8

Minimum dose, 120,000,000

Maximum dose, 240,000,000

The mixed vaccins employed in the second fifteen cases were on the following basis:

Bact. pertussis. . . .	1,000,000,000
Staphylococcus pyogenes aureus	500,000,000
Streptococcus pyogenes . . .	100,000,000
Micrococcus catarrhalis. . . .	40,000,000
Bact. influenzæ (Pfeiffer)	160,000,000

The quantities used in this series, and number of injections, are as follows:

Active Doses.

Amount Vaccin.	Dose — Minimum.	Dose — Maximum.	Number of Doses.	Type of Vaccin.
Case No. 16....21,800,000,000	1,800 million.	3,600 million	6	Mixed
Case No. 17....21,800,000,000	1,800 million.	3,600 million	6	Mixed
Case No. 18....17,600,000,000	2,000 million.	4,000 million	5	Mixed
Case No. 19....13,320,000,000	2,000 million.	2,000 million	8	Simple
Case No. 20....25,000,000,000	1,000 million.	4,000 million	8	Mixed
Case No. 21.... 1,600,000,000	120 million.	400 million	4	Simple
Case No. 22.... 2,300,000,000	200 million.	400 million	7	Simple
Case No. 23.... 4,200,000,000	200 million.	2,000 million	8	Simple
Case No. 24....10,000,000,000	2,000 million.	2,000 million	5	Simple
Case No. 25....26,000,000,000	1,000 million.	4,000 million	10	Simple
Case No. 26.... 5,000,000,000	1,000 million.	4,000 million	3	Simple
Case No. 27....22,950,000,000	2,000 million.	4,000 million	7	Mixed
Case No. 28....11,100,000,000	400 million.	3,600 million	4	Mixed
Case No. 29.... 7,300,000,000	500 million.	2,000 million	5	Mixed
Case No. 30....14,200,000,000	3,800 million.	3,800 million	4	Mixed

CASES NOS. 31, 32, 33, 34, 35, 36—PROPHYLACTIC DOSES.

First dose. Mixed Vaccin	1,900,000,000
Second dose. Mixed Vaccin.	3,800,000,000
Third dose. Mixed Vaccin	3,800,000,000

CASES NOS. 37, 38, 39, 40—WHOOPING COUGH—PHYLACOGEN—ACTIVE DOSES.

First dose.	½ c. c.
Second dose.	1 c. c.
Third dose.	1½ c. c.
Fourth dose.	2 c. c.
Fifth dose, etc.	2½ c. c.

RECAPITULATION—TREATMENT.

		First 15 Cases.	Second 15 Cases.	Total.
1. Active	Mixed	15	8	23 Cases
	Simple	0	7	7 Cases
		15	15	30 Cases

	First 15 Cases.	Second 15 Cases.	Total.
2. Average number of doses	8	6	Average 7 Doses

Active Treatment.

1. Better results obtained by mixed vaccins than by simple vaccins.

In this regard, Bordet and Gergan to whom we owe our present mode of treatment could not recover from the secretion of children suffering from whooping cough the specific organism after the spasmodic stage was evidenced, showing therefore, the possibility of more than one organism as the bacteriological factor in this clinical entity.

2. Use large initial dose, not less than 1,000,000,000 (except in children under 12 months or whooping cough complicated by other conditions, then 500,000,000) and increase from 1,000,000,-

000 to 1,800,000,000 per dose, the maximum quantity being 4,000,000,000 in my series, up to 5,000,000,000.

3. Intervals being every other day until one of the symptoms showed marked remissions, then twice each week until cured.

4. Despite the fact that some of our confreres have succeeded in using four doses of the vaccin, then discharging patient, the same has not been my good fortune, for the entire series the average number of doses have been seven.

PROPHYLACTIC TREATMENT.

1. In six cases no evidences of whooping cough.

2. Give large doses, particularly if the patient is in the same home with the active case, namely 1,800,000,000, up to 3,800,000,000.

Dr. H. L. K. Shaw, in the July issue of The *American Journal of Obstetrics,* reports that the number of whooping cough cases in institutions for children in the state of New York have diminished from 40 per cent to 7 per cent where the vaccins have been employed in a prophylactic way.

PHYLACOGEN TREATMENT ACTIVE.

The writer has never favored phylacogen for the reason that in the past, their demonstration in different cases (gonorrheal arthritis and typhoid) were very discouraging.

However in the presence of the graduate students of the New Orleans Polyclinic, four cases severe in character were treated and all discharged within a period of two weeks, the initial quantity being ½ c. c. increasing ½ c. c. every other day, the maximum quantity given was 2½ c. c.; each case averaged about five doses.

Of course this is not conclusive but opens a new method of treatment.

MORTALITY. Everyone of the fifty-six cases treated, including the forty herein described recovered from whooping cough. Compare this with the 8.1 per cent and 11 per cent mortality of New Orleans and Philadelphia, then determine your status concerning the vaccin therapy.

CONTRAINDICATIONS.

1. Cases suffering from Bronchial Asthma or Congenital Lues do not respond readily, particularly the former.

2. After the patient has passed the catarrhal stage and the

spasmodic stage is marked the vaccin will not lessen the period of the disease but will lessen the intensity of the attacks.

Age.

	First Series.	Second Series.	Total.
Under 1 year. . . .	3	2	5
Under 2 years. . . .	1	4	5
Between 2 and 5 years.	6	5	11
Between 5 and 9 years.	5	4	9
			30 Cases

Marked Cases.

Case No. 19. Complicated by congenital lues. Showed fair reaction, but duration was not diminished markedly.

Case No. 20. Complicated by acidosis. Reacted quickly.

Case No. 21. "Vomited everything she eat." Splendid result.

Case No. 22. Brought to office on pillow.

Case No. 23. Referred by Dr. Louis Levy. Became unconscious with each coughing spell."

Case No. 25. "Has had whooping cough for five weeks; unable to stand it any longer. Has lost about seven pounds.

Case No. 27. Referred to Dr. Wm. Kohlmann. "Unable to count the coughs."

Case No. 28. "Unable to retain any food whatsoever, and has not slept since the whooping cough started."

Duration.

Case	Treatment			Case.	Treatment		
	Before.	After	Total.		Before.	After	Total.
No. 1.....	5 days plus	18 days	23 days	No. 16.....	6 days plus	13 days	19 days
No. 2.....	6 days plus	28 days	34 days	No. 17.....	7 days plus	13 days	20 days
No. 3.....	5 days plus	28 days	32 days	No. 18.....	4 days plus	11 days	15 days
No. 4.....	7 days plus	24 days	31 days	No. 19 Syphilis	5 days plus	17 days	22 days
No. 5.....	42 days plus	22 days	64 days	No. 20 Acidosis	7 days plus	21 days	28 days
No. 6.....	1 day plus	26 days	27 days	No. 21.....	2 days plus	24 days	26 days
No. 7.....	7 days plus	13 days	20 days	No. 22.....	*14 days plus	14 days	28 days
No. 8.....	14 days plus	11 days	25 days	No. 23.....	*14 days plus	20 days	34 days
No. 9.....	1 day plus	28 days	29 days	No. 24.....	*14 days plus	11 days	25 days
No. 10.....	35 days plus	23 days	58 days	No. 25.....	*35 days plus	19 days	54 days
No. 11.....	14 days plus	32 days	46 days	No. 26.....	*21 days plus	7 days	28 days
No. 12.....	7 days plus	18 days	25 days	No. 27.....	4 days plus	12 days	16 days
No. 13.....	8 days plus	13 days	21 days	No. 28.....	3 days plus	20 days	16 days
No. 14.....	2 days plus	41 days	43 days	No. 29.....	7 days plus	12 days	19 days
No. 15.....	1 day plus	31 days	32 days	No. 30.....	14 days plus	7 days	21 days
Average.....	10 days plus	23 days	33 days	Average.....	10 days plus	15 days	25 days

*Omitting Cases Nos. 22, 23, 24, 25, 26, having had pertussis over two weeks.

Average..... 6 days plus 15 days 21 days

RECAPITULATION.

First Series. . . .	6 days plus	22 days	28 days
Second Series. . . .	6 days plus	15 days	21 days
Average. . . .	6 days plus	18 days	24 days

Omitting Cases Nos. 5, 10, 14, the first two having had the infection at least five weeks previous to treatment and the latter case complicated, the average duration was:

Treatment		
Before.	After.	Total.
6 days plus	22 days	28 days

Authorities such as Holt, Rotch, Cuntley, Garrod, Batten, Thursfield and Ruhrah estimate the duration of this disease, re-

spectively, 61 days, 90 days, 120 days, 30-90 days, 49-148 days, and 90-180 days.

Symptoms.

First Series (15 Cases).

(a) Weight.

13 Cases weighed. Six (6) cases gained average of 6 1/3 lbs.
Seven (7) cases lost average of 21 5/7 lbs.
Average lost, 13 cases, 14 lbs.

Second Series. (15 Cases).

Case No. 16 (not weighed)
Case No. 17 (not weighed)
Case No. 18 (not weighed)

	At Start.	At Discharge.	Gain.	Loss.
Case No. 19.....	16 lbs. 11 lbs.	15 lbs. 10 lbs.		—17 lbs.
Case No. 20.....	29 lbs.	27 lbs.		—32 lbs.
Case No. 21.....	31 lbs. 8 lbs.	32 lbs.	+ 8 lbs.	
Case No. 22.....	14 lbs. 10 lbs.	15 lbs. 3 lbs.	+ 9 lbs.	
Case No. 23.....	31 lbs. 4 lbs.	31 lbs.		— 4 lbs.
Case No. 24.....	20 lbs. 8 lbs.	21 lbs. 12 lbs.	+16 lbs.	
Case No. 25.....	18 lbs. 4 lbs.	21 lbs.	+44 lbs.	
Case No. 26.....	36 lbs.	36 lbs. 12 lbs.	+12 lbs.	
Case No. 27.....	49 lbs.	49 lbs.	Stationary	
Case No. 28.....	14 lbs. 8 lbs.	13 lbs. 10 lbs.		14 lbs.
Case No. 29.....	35 lbs.	37 lbs. 4 lbs.	+36 lbs.	
Case No. 30 (not weighed)				

Six (6) cases gained average 20 lbs.
Four (4) cases lost average 16 lbs.
One (1) case remained stationary.
Average gain in 11 cases, 5 lbs.
Average lost in twenty-four cases weighed was 9 1/2 lbs.

(b) Cough. (c) Vomiting.

After two or three injections have been given, marked diminution in the intensity and number of coughs and the practical eradication of the disagreeable vomiting factor.

(d) Complications.

Up to this writing I have not as yet seen any one of the series with a complication or sequelæ as the aftermath of this condition.

BLOOD MANIFESTATIONS.

Case.	Age.	Date.	Total White Cell Count.	Endothelial Leucocytes. Pct.	Lymp. Pct.	Eosinophiles Lymphocytes. Pct.	Neutrophiles. Pct.	No. of Vaccin Injections.
No. 9.	2½ mos.....	6/29/15	60,500	9	66	..	25	..
		7/ 8/15	8,150	5	56	..	39	4
		7/14/15	3,700	16	13	1	70	x2
		7/29/15	16,250	4	34	4	58	x4
No. 10.	3 yrs.....	7/10/15	18,800	3	57	3	37	2
		7/12/15	6,500	12	6	2	80	x3
		7/22/15	27,000	8	25	12	55	x3
		7/29/15	22,500	2	45	13	30	x2
No. 11.	3 yrs.....	7/ 8/15	13,500	6	53	4	37	..
		7/13/15	3,400	13	35	2	50	x2
		7/20/15	43,000	8	44	9	39	x3
No. 12.	3 yrs.....	6/24/15	13,540	9	45	7	39	..
		7/ 6/15	43,600	7	36	10	47	x3
		7/13/15	4,500	4	30	1	65	x3
No. 15.	4 yrs.....	8/ 3/15	25,500	8	41	6	45	2
No. 23.	4 yrs.....		13,950	..	73	7	20	x1
No. 28.	5 mos.....		24,000	..	90	3	7	x1

CONCLUSIONS.

Before Vaccin. (a) Marked leucotysis at onset of pertussis (13,540—60,500). (b) Significant lymphocytosis at onset of pertussis (41 per cent—66 per cent.) (c) Marked eosinophilia (0—12 per cent).

After Vaccin. (a) Marked leucopenia (3400—8,100), with decrease in number of lymphocytes and increase in the neutrophiles. (b) In third stage of pertussis, moderate leucocytosis with normal differential count.

Conclusions and Summary.

1. The treatment of pertussis (whooping cough) by vaccin therapy is rational and efficient.

2. Experience has taught that large initial (500,000,000-1,000,000,000) with subsequent large doses are fruitful of better and quicker results.

3. The vaccin therapy has proven the better treatment because

   a. Slight reaction.
   b. Duration averages only 24 days.
   c. The loss of weight is unappreciable, $9\frac{1}{2}\frac{3}{5}$.
   d. The intensity and number of coughing spells become less after seven days.
   e. Vomiting ceases after 1-2 weeks.
   f. No complications* in forty cases, the first series now exceeding twelve months duration.
   h. Mortality is 0 per cent.

4. The vaccin should be used extensively as a prophylactic means as it has reduced institutional whooping cough from 40 per cent to 7 per cent.

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* Complications: Pneumonia, pyelitis and tuberculosis.

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PROCEEDINGS OF THE AMERICAN SOCIETY OF TROPICAL MEDICINE

OBSERVATIONS ON LEISHMANIASIS AND PSEUDO-LEISHMANIASIS OF THE AMAZON BASIN.

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There exists in many regions of Tropical America a tegumentary leishmaniasis which resembles to a certain extent Oriental sore, but which is characterized by the frequent involvement of the mucosa of the nose and pharynx. These naso-pharyngeal lesions are generally considered to be secondary to the cutaneous infection, are progressive, and usually lead to a fatal termination. This disease has been known by various names in different regions, such as *bouba, bouton de Bahia* or *ulcére de Bauru* in Brazil, *buba* in Paraguay, *espundia* in Bolivia, *uta* in Peru, forest yaws in the Guianas, and ulcére de Torreaba in Columbia. These names have undoubtedly included tegumentary lesions of various etiologies.

A typical case of South American leishmaniasis has briefly the following clinical history. The patient usually gives a history of having been bitten by some arthropod (fly or tick) on some uncovered part of the body a short time previous to the development of the primary lesion. At the site of this bite there appear one or several erythematous and perigenous spots, which develop into vesicles that are at first clear but become purulent two or three days later. These pustules may break down to form an ulcer, or dry up and become frambœsiform lesions, or develop into papillomata. During the evolution of this cutaneous lesion there may be an elevation of temperature, and the neighboring lymphatic glands may become enlarged and painful. The primary sore may be single or multiple, and is usually located on the arms, legs or face, but occasionally on the trunk. It runs a chronic course, may become of considerable size, but after six months or more heals by cicatrization. After the cutaneous sore has healed, or sometimes before, the mucosal lesions develop. These lesions frequently begin in the

1. Observations made at the hospital of the Madeira-Marmore Railway Co., at Porto Velho, Amazonas, Brazil.

nose, usually on the lower part of the septum, and are associated with a coryza and a sense of nasal obstruction. The mucosa becomes tumid and hyperemic; the initial lesion progressing becomes a crusty, granulomatous, or ulcerative sore, which is at first limited to the mucosa. After a time the underlying tissues including the cartilage of the nasal septum may be attacked and destroyed, producing a disfiguring mutilation. The lesions may spread to the nasal fossæ, the palate, tonsils, pharynx, cheeks, tongue, and even to the esophagus and larynx. The hard palate may be perforated, the patients become aphonous, and suffer difficulty and pain during deglutition. The course of these lesions are very chronic, sometimes extending over a period of 20 to 30 years. There is frequently a terminal cachexia, and death finally occurs from exhaustion or from intercurrent disease.

A considerable number of cases having a clinical history corresponding more or less closely with the above description were encountered in the upper Madeira valley, Brazil, some of them being of local development and others coming from other parts of the Amazon basin. In the light of the parasitological findings and reaction of these patients to treatment these cases are of interest. The following 12 cases are the only ones of which records were kept, although many others were examined, because at the time the significance of the parasitologically negative cases was not realized. The essential facts of these cases are given in Table I.

In only two of these cases (Nos. 8 and 9) could a clinical diagnosis of leishmaniasis be confirmed by the discovery of the specific parasites in the lesions. Both of these were cutaneous cases of the ulcerative type, without naso-pharyngeal lesions (Figs. 1 and 2). Case 9 is remarkable for the extent of the cutaneous sore on his right calf. The patient also had a second small leishmanial sore on the lower posterior part of the right thigh. The sores in both cases were characterized by the restriction of the pathologic process to the cutaneous tissues, the absence of pus and the raised borders. In case 8 there was an area of papillomatous infiltration, surrounding the open sore. Leishmania could be demonstrated microscopically in material taken from any part of the edge, but not the fundus, of these sores at any time previous to treatment with tartar emetic. Both cases received intravenous injections of tartar emetic and were improving when I left Brazil. One other case (No. 6) undoubtedly had been leishmaniasis, since it had been

TABLE I.—Cases of Leishmaniasis and Pseudo-Leishmaniasis.

Case No.	Patient. Nationality.	Sex.	Age.	Locality Disease Contracted.	Cutaneous Lesions. How Contracted.	Location.	Duration.	Present Condition.	Naso-Pharyngeal Lesions. Location.	Duration.	Present Condition.	Microspocical Examination for *Leishmania*.	Reaction to Treatment. Tartar Emetic	Anti syphilitic.
*1	Brazilian	M.	25	Rio Madeira	Bite of "pium"	Hand	1 year	Healed	Nose	1 year	Active	Negative	? (See remarks)	.....
2	Portuguese. . .	M.	26	Rio Madeira	Bite of tick	Ear and wrist	2½ years	Active	.....	.....	.....	Negative	.....	Positive
3	Brazilian	M.	—	Territory of Acre	.....	Wrist	10 years	Healed	Nose	2 years	Active	Negative	.....	.....
4	Brazilian	M.	—	Amazonas	.....	Hand	2 years	Healed	Nose	1 year	Active	Negative	.....	Positive
5	Peruvian	M.	28	Peru	Bite of fly	Ankles	4 years	Healed	Nose	3½ years	Active	Negative	.....	Positive
†6	Peruvian	M.	28	Peru	Bite of "pium"	Ankle	10 years	Healed	Nose	5 years	Healed	Leishmania (See remarks)	Positive	.....
7	Brazilian	M.	20	Amazonas	.....	Ankle	3 years	Healed	Nose	2½ years	Active	Negative	.....	Positive
8	Barbadian . . .	M.	26	Rio Madeira	.....	Forearm	5 weeks	Active	.....	.....	.....	*Leishmania*	Positive	.....
9	Brazilian	M.	25	Rio Madeira	"Scratch of stick"	Calf and thigh	2½ months	Active	.....	.....	.....	*Leishmania*	Positive	.....
10	Brazilian	M.	27	Rio Madeira	Bite of "pium"	Ankle and hand	2 2/3 years	Healed	Nose	12/3 years	Active	Negative	.....	Positive
11	Brazilian	M.	45	Rio Madeira	Wound by spine of bamboo	Ear and ankle	4 years	Healed	Nose & pharynx	4 years	Active	Negative	.....	Positive
‡12	Brazilian	M.	24	Rio Madeira	Bite of borrashuda	Epigastrium	1 year	Active	.....	.....	.....	Negative	.....	.....

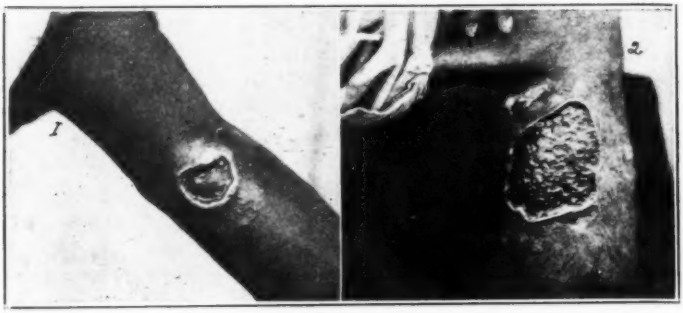
REMARKS.

* Patient reported that he felt better after tartar emetic; objectively no improvement could be observed.

† A case of healed leishmaniasis, diagnosed and treated by Dr. Thomas, of the Observation Laboratory of the Liverpool School of Tropical Medicine at Menoac.

‡ Framboesiform lesion.

diagnosed and treated by Dr. H. W. Thomas of the Observation Laboratory of the Liverpool School of Tropical Medicine at Manaos, but was healed when it came under my observation.



EXPLANATION OF PLATE.

Fig. 1. Leishmanial lesion on the forearm of Case 8. Note the limitation of the sore to the cutaneous tissues, the raised edge and the area of papillomata surrounding the ulcer.

Fig. 2. Leishmanial lesion on the calf of Case 9. Note the extent of the sore, the limitation of the ulcer to the cutaneous tissues, and the raised edge of the lesion.

In the other nine, or 75 per cent of the cases, although the history and symptomatology corresponded closely enough to South American tegumentary leishmaniasis to justify a clinical diagnosis, and indeed many of them had been so diagnosed by physicians, *Leishmania* could not be found. In every case examination was made of material scraped from several different places at the edge of the sore and from the different sores when more than one existed, and in many of these cases repeated examinations were made, all with negative results. In consequence of these consistently negative parasitological findings and the reaction of many of these cases to treatment, I am convinced that these cases were not leishmaniasis but were what I have designated for convenience, because of their clinical similarity, as pseudo-leishmaniasis.

On account of the manifold variety of cutaneous and mucosal lesions presented by South American leishmaniasis it may resemble clinically many other diseases of the skin and mucosa. It has been confused with syphilis, yaws, lupus, cancer, sporotrichosis and blastomycosis. Splendore (1911) and Escomel (1915) have called attention to the occurence in Brazil and in Peru and Bolivia respectively of a blastomycosis which presents ulcerations and framboesia-like vegetations of the cutaneous and mucosal surfaces which require very careful clinical examination to distinguish from leish-

maniasis. Migone (1915) states that in Paraguay, as well as in all other countries where *buba* exists, the malady has been considered identical with syphilis, but of a kind not at all amenable to ordinary specific treatment.

Of my parasitologically negative cases, case 12 might from its appearance have been a dermatomycosis, although no evidence of such an etiology could be found. Cases of evident ulcus tropicum have been purposely excluded from the list in table 1. The lesions in most if not all of the remainder were probably of syphilitic origin. Probably in no region in the world is syphilis more prevalent than in the Amazon basin. At the Candelaria Hospital, Porto Velho, it is estimated that 80 per cent of the patients admitted are syphilitic. Many authors working in the Tropics have called attention to the comparative rarety or absence of involvement of the central nervous system and the frequency and severity of skin lesions in the late stage of syphilis in the natives of Tropical countries (Phlen, 1914). Furthermore, the prompt reaction of many of these cases to specific anti-syphilitic treatment makes the diagnosis reasonably sure.

It is to be regretted that facilities were not available for studying the Wassermann reaction of these patients.

It has usually been assumed (Escomel, 1911; Mayer, 1913; Monge, 1914) that the cutaneous sore, the *"espundial chancre"* of Escomel, invariably precedes the mucosal lesion in South American leishmaniasis, and that at least temporary general infection occurs some time during the development of the cutaneous sore and preceding the localization of the infection in the naso-pharyngeal mucosea. There is, however, no parasitological evidence of a general infection. *Leishmania* have never been found in the blood or internal organs of these cases (Migone, 1913; Thomas, 1916). The occasional elevation of temperature and the enlarged and painful lymphatic glands in the neighborhood of the cutaneous sore, which have been considered as supporting the theory of a general infection, are probably due to secondary pyogenic infections of the cutaneous sore. Furthermore cases of cutaneous leishmaniasis without subsequent mucosal involvement and mucosal leishmaniasis without preceding cutaneous lesions are now known to be of not infrequent occurrence in South America (Splendore, 1911; d'Ultra e Silva, 1915). D'Ultra e Silva states that among his cases only about 75 per cent had both cutaneous and mucosal infections.

Auto-inoculation has been advanced by Carini (1911) and d'Ultra e Silva (1915) as an explanation of the mucosal involvement. According to this conception the patient by scratching the cutaneous lesion and then picking his nose inoculates the nasal mucosa. That such auto-inoculation is possible and may sometimes occur cannot be denied; but if this be a sufficient explanation of the frequency of such mucosal involvement in South American leishmaniasis, then one would expect to find mucosal involvement equally common in the cutaneous leishmaniasis of the Orient. It is true that Cadamatis and Melissidis (1911), La Cava (1913), Castellani (1913) and Christophers (1914) have reported single cases of mucosal involvement in Oriental sore in Crete, Italy and Sicily, India and Anglo-Egyptian Sudan respectively, but such complications are extremely rare in the Orient, while they are the rule in South America.

The true explanation of the frequent mucosal involvement in South American leishmaniasis probably lies in the species of insect and its habits which transmits the disease in this region. I believe that the cutaneous and mucosal lesions represent separate inoculations of the parasite by a biting insect which not only attacks the exposed cutaneous surfaces but which also has a predilection for the face, nose, and mouth; whereby its bites, or by being crushed and its remains scratched into the nostrils, or by being crushed in the mouth, infect the nasal or buccal mucosa. This is the only theory which would explain the great prevalence of mucosal lesions in the absence of a generalized infection, the not infrequent primary mucosal lesions, and the frequent long interval between the supposed primary cutaneous sore and the development of the mucosal lesion. As an example of this latter condition, in case 6, which had been an undoubted case of nasal leishmaniasis, the cutaneous sore preceded the lesion in the nose by 5 years. That the infection had remained latent in this patient for this time and then reappeared in the nasal mucosa does not seem probable. Moreover, when a cutaneous ulcer does precede a leishmanial lesion of the mucosa, there is frequently no evidence that the former was of the same etiology because the cutaneous sore has healed; and it would be difficult to find a native in the Amazon basin who cannot show one or more scars of healed cutaneous ulcers.

The mucosal lesions of South American leishmaniasis are sup-

posed furthermore to differ from the cutaneous lesions of both the Oriental and the Occidental disease in the tissues involved and in their course. The skin lesions of both regions are restricted to the cutaneous tissues, and they are self-limiting, the sore healing spontaneously after running a course of some months. On the other hand, the mucosal lesions of the South American disease are supposed to attack not only the mucosa but to destroy the underlying tissues including cartilage; and they are progressive, the lesions never healing spontaneously. That the moist mucosa and surfaces may be a more favorable tissue than the skin for the multiplication of the parasite and the perpetuation and spread of the lesion seems possible; but that the parasite should change its cellular habitat and its pathogenic properties, when transplanted to the mucosa, so that it attacks tissues other than the tegumentary, even cartilage, does not seem probable. Laveran and Nattan-Larrier (1912), who studied in sections the histology of the mucosal lesions, found the parasites restricted to the mucosal tissues, and almost exclusively in the superficial and median parts of the thickened corium at the borders of the ulceration. I am of the opinion that the extensive destruction of the deeper tissues frequently seen in old cases is due to a secondary infection, and that this secondary infection is frequently syphilitic. The *Leishmania* infection probably serves to localize the secondary infection in the naso-pharyngeal mucosa, and by extending the mucosal lesion aid in the spread of the process which destroys the underlying tissues. Da Matta (1915) believes that naso-pharyngeal leishmaniasis can be distinguished from syphilitic ulceration of these localities by the fact that the former never attacks the bones of the nose. I believe that we can go farther and say that uncomplicated South American leishmaniasis never attacks anything but the tegumentary tissues.

The method by which man becomes infected with the several leishmaniases is one of the most puzzling problems of tropical epidemiology. The preponderance of evidence now available indicates that they are all transmitted by some blood-sucking arthropod; but by what specific arthropod, whether as human parasites by an alternative host or as strayed arthropod parasites (Fantham, 1915), and whether by inoculation or by the contaminative method, remains still to be proved. In South America the natives frequently accuse a tick or a blood-sucking fly. Investigators working in different regions have incriminated various arthropods, and

it is possible that the disease has different vectors in different parts of Tropical America.

With reference to my cases it is interesting that the majority of the cases of pseudo-leishmaniasis attributed their lesions to the bite of some arthropod; while of the cases of true leishmaniasis, one (case 8) professed ignorance of the origin of his sore. Case 9 stated that the lesion started from the scratch of a stick, and Case 6 (healed) incriminated the *"pium."* One patient (Case 12) killed the fly, in the act of biting him at the site and just before the development of the lesion, and identified it by the native name of *"borrashuda."* This information might have been of epidemiological value, but unfortunately *Leishmania* were not found in his lesion.

The epidemiological probabilities concerning the transmission of leishmaniasis in the Amazon basin, based upon the available date, may be summarized as follows:

1. The vector is probably some blood-sucking arthropod, because (a) the lesions usually start in the otherwise intact skin, (b) the parasites are incapable of surviving on the surface of the skin or of penetrating the sound epidermis, and (c) the lesions are usually known to start from the bite of an arthropod.

2. This arthropod must have a forest habitat, because the disease is almost if not quite exclusively one of wooded regions.

3. The arthropod must be one biting only exposed parts of the body, because the lesions are almost wholly restricted to such locations.

4. It is probably a very prevalent arthropod, because (a) man like other mammals is probably relatively insusceptible and (b) presumably only a small proportion of the arthropoda are infected.

5. It is probably a small arthropod, because (a) it and its bites are frequently unnoticed and (b) the infection of man very probably takes place contaminatively by crushing the vector and scratching the remains into the wound on the skin or by simply crushing it on the mucosal surfaces.

6. The arthropod must have a predilection for the nose and mouth, because mucosal infections are very common.

7. The arthropod is probably not only a blood-sucker but one which has a predilection for scratches and wounds, because leishmanial sores sometimes originate at such location.

These conditions tend to exclude from epidemiological consid-

eration body parasites and household insects such as lice, fleas, bed bugs and house flies; the larger forest arthropods, such as the ticks and tabanid flies; and to a lesser extent the mosquitoes.

The insects in the Amazon basin which best satisfy these conditions are the *"piums." Pium* is the native name for minute blood-sucking flies which belong chiefly to the genus *Simulium,* but which also includes flies of the genus *Ceratopogon.* These flies breed in water in the forest and are extraordinarily prevalent in many parts of the Amazon basin. They attack man in vast swarms over all exposed parts of the body including the face and enter the nostrils and mouth. They also have a predilection for scratches and wounds. The tormented individual, in attempts to free himself from their attacks, crushes large numbers of these pests on his skin and in his nose and mouth and scratches their remains into the itching wounds. After a day's exposure to the attacks of these flies the face and other exposed parts of the body often present an appearance as if the person were suffering from some erruptive disease. Unfortunately my attention was directed to these flies as the possible vectors of leishmaniasis only shortly before my departure from Brazil. In consequence of this and of an unprecedented dry season which had greatly diminished the number of these flies, an experimental investigation of the possible role which the *piums* play in the transmission of leishmaniasis could not be carried to a definite conclusion; but I am of the opinion that in any epidemiological investigation of this disease in the Amazon basin the flies of these two genera, especially of *Simulium,* should receive careful consideration.

SUMMARY.

1. Tegumentary leishmaniasis is wide-spread in the Amazon basin, but is probably less prevalent than clinical observation would indicate.

2. Cutaneous-mucosal lesions clinically similar to tegumentary leishmaniasis, but in which the specific parasites, *Leishmania,* cannot be found, are very common and are frequently mistaken for that disease. Many of these pseudo-leishmanial lesions are of syphilitic origin.

3. The mucosal lesions of South American leishmaniasis, which have been generally considered to be a secondary manifestation of a primary cutaneous infection, probably represent a distinct primary infection.

4. The extensive destruction of sub-mucosal tissues including cartilage, frequently observed in old naso-pharyngeal lesions of South American leishmaniasis, are probably not due to *Leishmania* but to a secondary infection which is frequently syphilitic.

5. Minute blood-sucking flies known locally as *"piums,"* and which include chiefly the Simulidae but also Ceratopogoninae, are the insects which conform best to the epidemiological data as vectors of leishmaniasis in the Amazon basin.

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BULLETIN OF THE LOUISIANA STATE MEDICAL SOCIETY

Edited by DR. L. R. DE BUYS, Secretary-Treasurer.

AMERICAN RED CROSS LETTER.

A letter has been received from the American Red Cross which should interest the physicians throughout the state. It draws attention to the fact that only physicians are called upon to conduct First Aid courses of the American Red Cross and eventually to pass on the proficiency of the candidate for a certificate.

In order that the American Red Cross may appoint qualified physicians to give instructions for these First Aid courses it is desired that as many members as possible in the State and Parish Medical Societies be selected as instructors and examiners. The

Red Cross offers to furnish applicants with full information describing such work. Those members of the medical profession who are desirous of doing their bit are hereby given the opportunity.

The objects of the First Aid divisions are to organize classes in Accident Prevention and First Aid to the Injured among men and women in all communities and in every industry; to co-operate with organizations calculated to spread knowledge of accident prevention in all walks of life; to save life; to relieve suffering; to promote human efficiency, etc.

It is not necessary to be a member of the Red Cross to organize or to join a First Aid class.

Persons desiring to organize a class should secure a sufficient number of members—not less than four nor more than twenty-five. A class of ten or fifteen is usually recommended. The minimum age limit is sixteen.

A Red Cross First Aid Course consists of not less than ten lectures and demonstrations of one and a half hours duration, or a total of fifteen hours instruction. In the discretion of the instructor and for the convenience of the class, shorter lectures may be given provided the time is made up by increasing the number of lectures. At the end of the course an examination is held and First Aid Certificates issued to successful candidates.

It is to be hoped that this appeal will result in securing First Aid instructors and in the establishment of First Aid classes in every community in the state.

Those physicians desiring to render assistance to this worthy cause should send in their names to the Secretary-Treasurer so that he might promptly place them in communication with the duly appointed authority.

Nearly 1000. Only 22 more members needed to make our membership 1000! It is now 978, the largest bona fide membership in the history of the Louisiana State Medical Society. Let us make it 1000. This can easily be done with the assistance of our members. If each member will remember to ask every physician he meets within the next two weeks whether or not he is a member of the State Society and if he is not secure him as a member, the 1000 membership will soon be passed. Only 22 more needed. Let every member help.

MEDICAL SECTION, LOUISIANA STATE COMMITTEE OF NATIONAL DEFENSE.

Meeting of Executive Committee.

MONDAY, AUGUST 13, 1917.

Meeting of the Executive Committee of the State Committee of National Defense, Medical Section, was called to order by the chairman at 8 p. m. on the above date at 1122 Maison Blanche Building, with the following members present: Drs. S. W. Stafford, E. L. Leckert, Charles McVea, C. J. Miller, Isadore Dyer, chairman, and L. R. DeBuys, secretary-treasurer. Absent, Dr. Oscar Dowling, out of the city.

The chairman stated that the organization of the State Committee had been effected on July 3, under the instruction of the Council of National Defense and the American Red Cross, doing away with the original State Committee on Medical Preparedness and the original Red Cross Committee, the two being combined, under the instruction, as the State Committee of National Defense, Medical Section. On July 3, Dr. Isadore Dyer was elected chairman of the committee, and Dr. L. R. DeBuys, secretary-treasurer. The reorganized committee directed the chairman to appoint an Executive Committee of five to coöperate with the officers above named. He appointed Dr. Charles McVea, of Baton Rouge, and Drs. Oscar Dowling, S. W. Stafford, C. J. Miller and E. L. Leckert, of New Orleans, on said committee.

The chair stated that the membership of the State Committee had been outlined in the original instructions from Washington, to consist of the original committees of the Red Cross and Medical Preparedness, of the ranking medical officer of the Louisiana National Guard, of the surgeon at Jackson Barracks, of the deans of medical schools, of the Medical Reserve Corps officers in the State, and of the president-elect and secretary of the State Medical Societies, and of other persons who had been active in the work relative to the purpose of the committee. Upon motion, the action of the officers was approved, and it was voted that the chairmen of the several auxiliary parish committees should be included in the membership of the State Committee of National Defense, Medical Section.

It was further moved and voted that, when compiled, the membership of the State Committee should be notified of their membership, with the request for their acceptance individually and their approval of the policy that the routine business of the State Committee shall be conducted by the Executive Committee, with the understanding that all matters requiring the action of the State Committee as a whole shall be submitted through the mail for ballot, in the absence of a stated meeting of the entire State Committee.

The officers reported that, with the purpose of obtaining an exact list of the Medical Reserve Corps officers in the State and of those who might be available for such service, a card had been issued, with specific inquiries covering the information necessary for a proper classification of the medical men in the State. Nineteen hundred and forty-one of these were sent out, and over 600 replies have been received. The basis of inquiry will permit a classification of men thirty-five years of age and under, over thirty-five and under forty, and over forty years of age, with a statement of their availability or not, and, if not, the reasons why they shall not be qualified for the Medical Reserve Corps. As over 100 replies received expressed a desire for service with the Medical Reserve Corps, the circular would seem justified.

Upon motion, it was voted that the action of the officers in undertaking the census of the profession of the State, with the object of deriving exact information as to the Reserve Corps for other purposes in classifying the profession, with the idea of supplying the central authorities with the desired information, be approved.

The following preamble and resolutions were offered and voted:

In view of the fact that other States have, through their Medical Section of State Committee of National Defense, submitted formal resolutions covering a selective draft of medical men for military duty, the Medical Section of the State Committee of National Defense of Louisiana offers the following resolution:

Whereas, the estimate of medical men available for military duty under the age of thirty-one years would seem to total some 12,000, based upon the average annual graduation of 4,000 men over the age of twenty-six years, and discounting the total by the number serving as interns in hospitals and otherwise exempted; and,

Whereas, the census to date of the State of Louisiana shows a total of some 12 per cent of the quota of an estimated 20 per cent either already commissioned, examined or willing to be examined for the Medical Reserve Corps; and,

Whereas, the proportion of men still available through voluntary

application is large enough to more than cover the estimated number to come from Louisiana.

Be it resolved, That the selective draft is not at this time necessary in the State of Louisiana.

A communication was read from the Council of National Defense covering the personnel of the Medical Corps and of the Medical Reserve Corps of the United States of America, through which adequate recognition of the medical organization of the army is proposed, with ranks equal to provision now existing for other divisions of the army service. The bill is known as the Owen Bill (S. 1786, Sixty-fifth Congress, First Congress), and the communication urges all State committees to use influences with the representatives in Congress for its passage.

It was voted that the chairman and secretary be instructed to telegraph the Senators and Congressmen of Louisiana to exert influence for the passage of the bill. Further, that the members of the State Committee be urged to likewise communicate with their respective representatives in Washington to the same end.

A communication from the Surgeon General's office was received, covering the general status of the Medical Reserve Corps in the State, advising a survey and classification of the medical men in the State as to their availability for the Medical Reserve Corps.

As this census had already been undertaken by the officers of the State Committee of National Defense, Medical Section, the communication was referred to the officers, with the instruction to proceed with the other matters contained.

A communication from the Committee on State Activities of the Council of National Defense was received, covering the classification of physicians in the State for military service, the encouragement of applications for the Medical Reserve Corps, the exemption of medical students and the organization of local committees of the Medical Section of the State Committee of National Defense, for the purpose of reducing the rejections of recruits through correction of defects before examination.

On motion, the chairman and secretary were instructed to cover the several items in the communication by suitable action.

Upon motion, the chairman and secretary were instructed to obtain government stationery and franking privileges attached to the correspondence and other mail matter to be mailed in connection with the operation of the committee. Like instruction, on due notice, was given the chairman and secretary to obtain contribu-

tions from the members of the medical profession of the State in the sum of one dollar per capita to cover the expenses of the operation of the Medical Section of the State Committee of the National Defense in the event that funds are not otherwise provided.

Upon motion, the meeting adjourned *sine die*.

ISADORE DYER, Chairman.

L. R. DEBUYS, Secretary-Treasurer.

From the Surgeon General to Chairman, State Committee, Medical Section, Council of National Defense.

Subject: Medical Reserve Corps, U. S. Army.

1. It is believed that it would be of great advantage to this department if each State Committee would make a census of its State with a view of dividing the medical profession into two classes: (a) those who cannot be spared for army service because of their importance to the civil community; and (b) those who can be spared. Class (a) should be requested to refrain from offering their services. Class (b), on the contrary, should be encouraged promptly to apply for appointment. This office is frequently called upon to give advice along these lines in individual cases, but the department does not care to assume this responsibility, believing, as it does, that the question is one that can much better be decided by the State Committee acting in conjunction with the County Committee.

2. The department will not feel called upon to consult the list prepared under paragraph 1 when individual applications are received, since it will be assumed in all cases that the individual offering himself can be spared and will be at the disposal of the department for such duty as the exigencies of the service may demand.

3. For the purpose of this census, the State Committee should act as a clearing house for the County Committees.

4. Frequently inquiries are made as to whether a medical officer will be assigned to duty in accordance with his medical specialty. In this connection, attention is invited to the fact that a large proportion of the administrative work of the Medical Department of the newly organized army will fall upon the officers of the Medical Reserve Corps. The officers of the regular establishment are so few in number that they will be available for only the most important administrative positions. With this in mind, it will be readily understood that officers of the Reserve Corps must largely supplement their technical knowledge by a clear conception of military co-ordination and administration before they can be of the greatest service to the department.

5. They should offer themselves without reservation, considering their medical training as the basis upon which to build their education as medical officers.

6. It is true, nevertheless, that all officers of the Reserve Corps are card-indexed according to their special qualifications, and that when the army is fully organized and working smoothly every effort will be made to assign each officer where his special qualifications will be most useful to the Government and where the work will be congenial to the officer himself.

7. The department has at its command, at present, only about one-

half the number of officers that will be required for an army of two million men.

8. If your State Committee believes that, by direct and personal appeal, many of your desirable physicians may be led to apply for appointment in the Medical Reserve Corps, you are requested to name two or three medical men of high standing WHO HAVE ACCEPTED THEIR COMMISSIONS in the Reserve Corps, who shall plan an itinerary of the State for the purpose of making such appeals and conducting the necessary examinations. This journey must be a continuous one, the precise schedule being submitted to the Surgeon General's office before any order can be issued by the Adjutant General calling these men to temporary active duty and authorizing their travel. Such an itinerant board should secure the co-operation of the County Committees before beginning its tour.

9. Your committee is urged to take such steps as may secure the prompt acceptance of commissions issued, or their immediate return to this office.

10. To your committee I wish to express my appreciation for the generous and efficient help which you have given to the Medical Department during the present emergency.

W. C. GORGAS,
Surgeon General, U. S. Army.

NOTICE.

Journal readers who have not yet applied for the Medical Reserve Corps and who wish to do so, should return the cards of the State Committee on National Defense at once. By complying with this it will be possible to arrange for examinations in various parts of the State at an early date. Full particulars regarding the examination for the Reserve Corps may be had by addressing Medical Reserve Corps Examining Board, 1551 Canal street, New Orleans.

NEWS AND COMMENT

PHILIPPINE ISLANDS' QUARANTINE STATION—The Island of Cauit, Province of Cebu, Philippine Islands, has been set aside by President Wilson for the use of the Quarantine and the Marine Hospital Services. This island is now being used by the United States as a quarantine station.

BRITISH MEDICAL CASUALTIES—Official information has been obtained stating that total casualties among British medical officers on the western front from the beginning of the war to June 25, 1917, are as follows: Killed, 195; wounded, 707; medical officers dying from sickness, 62. This is contrary to the statements as to the large number of casualties among British medical men.

TRACHOMA IN THE ARMY—A warning to recruiting officers to

guard against accepting applicants who may be suffering from trachoma has been issued by the Public Health Service.

Tuberculosis Conference—The fifth annual Mississippi Valley Conference on Tuberculosis will be held in Minneapolis and St. Paul, October 8-10, under the presidency of Mr. James Minnick, Chicago. The sessions of the first day will be held at Hotel Radisson, Minneapolis, those of the second at the State University, and those of the third day at the Hotel St. Paul.

Women Medical Students at Columbia—A gift of $50,000 from Mr. George W. Brackenridge of San Antonio, Texas, will enable Columbia University to open its doors to women students this fall. Work on the addition to the present building has begun, which will provide extra laboratory facilities in the departments of chemistry, pharmacology, pathology and bacteriology.

German Synthetic Drugs Banned—On July 21, the Treasury Department revoked the licenses, involving seven of the chief chemical firms of Germany, under which German chemical firms have been exporting to the United States through northern European neutral countries, serums, vaccins, antitoxins and other biological products. The inability of the Treasury Department to inspect the plants of the companies on account of the war is the cause of the revocation.

Control of Cancer—A resolution was adopted by the National Council of the American Society for the Control of Cancer, at its June meeting, commending the "action of the U. S. Bureau of the Census in publishing its notable report on the mortality from cancer in the U. S. Registration Area in 1914, and recording its appreciation of the courteous cooperation of the Director of the Census and all members of his staff who contributed to the contribution of this unique volume, which represents an unparalled contribution to the statistical study of malignant disease, and has already furnished the basis for many promising special investigations."

Meeting of Obstetricians and Gynecologists—The thirtieth annual meeting of the American Association of Obstetricians and Gynecologists will be held at the Robert Treat Hotel, Newark, N. J., September 17-19, under the presidency of Dr. John William Keefe, Providence, R. I. Dr. Edward J. Ill, Newark, is chairman of the committee of arrangements.

Orthopedists Elect Officers—At the annual meeting of the

American Orthopedic Association, held in July, the following officers were lected: president, Dr. Hebert P. H. Galloway, Winnepeg, Manit.; vice-president, Dr. Walter G. Stern, Cleveland; secretary, Dr. John Ridlon, Chicago, and treasurer, Dr. Gwilym G. Davis, Philadelphia.

Gift From an American University—The municipality of Lyons has received from the University of Columbia the proceeds of a prize of $2,000, which it has bestowed on the work of Edward Herriot, mayor of Lyons, "Les oeuvres de guerre lyonnaises." This sum will form the first donation toward a Franco-American sanatorium founded by the municipality for the reception of tubercular patients.

Eleven Thousand Commissions Offered, Five Thousand Accepted—Out of 11,000 commissions offered in the Medical Reserve Corps, only 5,000 have been accepted, according to the Council of National Defense. An investigation of the cause of this condition of affairs is being undertaken by the medical section of the Council.

Selective Draft For Doctors—Congress is being petitioned by the doctors attached to the various hospitals in New York City to provide for a selective draft for American doctors for military service. The petition emanates from the medical section of the Council for National Defense and urges a selective draft for doctors between 21 and 45 years of age to act as medical officers, and to exempt them from service in the national army as privates.

To Commemorate Work of Dr. McIntyre—The American Academy of Medicine, in appreciative commemoration of the work of Dr. Charles McIntyre, Easton, Pa., secretary of the academy for forty-five years, announces that it will give two prizes to be awarded at the annual meetings in 1918 and 1921, respectively. The subject for 1918 is "The Principles Governing the Physicians' Compensation in the Various Forms of Social Insurance," and "What Effect Has Child Labor on the Growth of the Body?" will be the subject for 1921.

Mississippi Nurses Pass State Board—At the recent examination of the board of nurses' examiners, held in Greenville, Miss., twenty-seven were registered for the state of Mississippi.

Soil Pollution Survey—The International Health Board is collaborating with the State Board in furnishing money for health survey work in Louisiana under the direction of the State authori-

ties. Dr. R. S. Crichlow, a 1917 graduate of the Tulane University School of Medicine, has been appointed as the soil pollution survey specialist under the direction of Dr. Oscar Dowling, President of the State Board of Health, and will go to Laurel and Bay St. Louis, Miss., to study under specialists at those places. The international Board will provide for other specialists in this work, and prefers graduates of Johns Hopkins and Tulane Universities.

The National Board of Medical Examiners held its second examinations in Washington, D. C., June 13 to 21. There were 24 qualified candidates, 12 of whom appeared for examination, the others having been ordered into active duty between the time of their application and the date of the examination. Of the 12 who took the examination, 9 passed.

The next examination will be held in Chicago, October 10 to 18. The regular Corps of the Army and Navy may be entered by successful candidates without further professional examination, provided they meet the adaptability and physical requirements.

There will also be an examination in New York City in the early part of December.

For further information, address the secretary, Dr. J. S. Rodman, 2106 Walnut St., Philadelphia, Pa.

The University of Toronto has decided to increase the length of the undergraduate course in medicine from five to six years. This regulation, however, will not be practiced until after the close of the war.

Mortality From Tuberculosis—A circular letter has been sent out by the Department of Commerce, the Bureau of the Census, inviting the co-operation of all physicians in carefully recording or supervising the statements of occupations on death certificates. The Bureau is planning a monograph on the mortality from tuberculosis covering the year 1918, and the value of the monograph will depend largely on the accuracy of the information in regard to the occupation of decedents.

The Louisiana State Board of Examiners has added Alabama to the list of states with which this state reciprocates, we are informed by the acting secretary, Dr. E. W. Mahler. This makes the list now include thirty-three states as follows:

Alabama, Arkansas, California, Colorado, Delaware, District of Columbia, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky,

Maine, Maryland, Michigan, Minnesota, Mississippi, Missouri, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, North Carolina, North Dakota, Ohio, Pennsylvania, Utah, Vermont, Virginia, West Virginia, Wisconsin and Wyoming.

REMOVALS—Dr. B. P. Blackstone, from Lindsay, Montana, to Ames, Iowa. Dr. H. D. Bulloch, from Folsom, to Covington, La.

PERSONALS.—Dr. J. C. Cole, Robt. Bernhard, C. J. Gondolf, Edmund Moss, of New Orleans, and Robt. A. Strong, of Pass Christian, have been assigned to special work at Fort Sam Houston for the purpose of examining officers and soldiers, so as to exclude tuberculosis.

Dr. C. Jeff Miller, of New Orleans, was appointed by the Governor as chairman of the Federal Exemption Board for the New Orleans District.

Dr. Isadore Dyer, Major in the Medical Reserve Corps, has been ordered on active duty, for the present at New Orleans.

PUBLICATIONS RECEIVED

W. B. SAUNDERS COMPANY. Philadelphia and London, 1917.

The Surgical Clinics of Chicago. June, 1917. Vol. 1.

The Medical Clinics of North America. July, 1917.

The Baby's Food, by Isaac A. Abt., M. D.

The Science of Nutrition, by Graham Lusk, Ph. D., Sc. D., F. R. S. (Edin.) Third edition.

C. V. MOSBY COMPANY. St. Louis, 1917.

Handbook of Gynecology, by Henry Foster Lewis, A. B., M. D., and Alfred de Roulet, B. Sc., M. S., M. D.

THE YEAR BOOK PUBLISHERS. Chicago, 1917.

The Practical Medicine Series. Volume III. The Eye, Ear, Nose and Throat. Edited by Casey A. Wood, C. M., M. D., D. C. L.; Albert H. Andrews, M. D., and George E. Shambaugh, M. D.

WILLIAM WOOD & COMPANY. New York, 1917.

Manual of The Diseases of the Eye, by Charles H. May, M. D. Ninth edition revised.

THE MACMILLAN COMPANY. New York, 1917.

The Modern Milk Problem in Sanitation, Economics, and Agriculture, by J. Scott MacNutt.

The Mastery of Nervousness, by Robert S. Carroll, M. D.

F. A. DAVIS COMPANY, Publishers. Philadelphia, 1917.

Building Human Intelligence, by Dr. Arnold Lorand. Translated from the German, by Philip Fischelis, M. D.

Materia Medica and Prescription Writing, by Oscar W. Bethea, Ph. G., F. C. S. Second revised edition.

WASHINGTON GOVERNMENT PRINTING OFFICE, Washington, D. C., 1917.

Public Health Reports. Vol. 32, Nos. 27, 28, 29 and 30.

Report of the Health Department of the Panama Canal. May, 1917.

Rural Obstetrics, by Grace L. Meigs. Children's Bureau.

MISCELLANEOUS.

Medical and Surgical Reports of the Episcopal Hospital. Vol. 4. (Press of Wm. J. Dornan, Philadelphia, 1916).

Quarterly Bulletin Louisiana State Board of Health. New Orleans, June, 1917.

REPRINTS.

Biopsy and Cancer—A Review; The Cancer Campaign Quarternary; The Problem; The Public; The Patient; The Physician. By Wm. Seaman Bainbridge, A. M., Sc. D., M. D., C. M.

Historical Notes on the Medical School of the University of Pennsylvania, with Some Discussion of Recent Problems in Medical Teaching. By Charles K. Mills, M. D., LL. D.

The Influence of secretin on the Number of Erythocytes in the Circulating Blood. By Andrew W. Downs and Nathan B. Eddy.

Acanthokeratodermia Praecornufaciens. By Albert J. Chalmers, M. D., F. R. C. S., D. P. H., and Selim Atiyah, B. A., M. D.

A Case of Ulcerating Granuloma Refractory to Intravenous Injections of Antimony, X-rays, and Other Forms of Treatment. By George C. Low, M. A., M. D., C. M., and H. B. Newham, M. D., M. R. C. P.

MORTUARY REPORT OF NEW ORLEANS.
Computed from the Monthly Report of the Board of Health of the City of New Orleans, for July, 1917.

CAUSE.	White.	Colored.	Total.
Typhoid Fever	12	9	21
Intermittent Fever (Malarial Cachexia)	1	1	2
Smallpox	------	------	------
Measles	------	------	------
Scarlet Fever	------	------	------
Whooping Cough	2	------	2
Diphtheria and Croup	------	------	------
Influenza	3	1	4
Cholera Nostras	------	1	1
Pyemia and Septicemia	------	------	------
Tuberculosis	44	65	109
Cancer	29	9	38
Rheumatism and Gout	2	------	2
Diabetes	1	1	2
Alcoholism	2	------	2
Encephalitis and Meningitis	------	1	1
Locomotor Ataxia	1	------	1
Congestion, Hemorrhage and Softening of Brain	26	13	39
Paralysis	3	1	4
Convulsions of Infancy	1	1	2
Other Diseases of Infancy	4	14	18
Tetanus	------	1	1
Other Nervous Diseases	5	------	5
Heart Diseases	53	33	86
Bronchitis	------	2	2
Pneumonia and Broncho-Pneumonia	6	20	26
Other Respiratory Diseases	1	------	1
Ulcer of Stomach	------	1	1
Other Diseases of the Stomach	3	------	3
Diarrhea, Dysentery and Enteritis	22	25	47
Hernia, Intestinal Obstruction	3	2	5
Cirrhosis of Liver	13	4	17
Other Diseases of the Liver	4	4	8
Simple Peritonitis	1	1	2
Appendicitis	6	------	6
Bright's Disease	16	19	35
Other Genito-Urinary Diseases	15	8	23
Puerperal Diseases	7	4	11
Senile Debility	5	1	6
Suicide	2	1	3
Injuries	21	13	34
All Other Causes	27	22	49
TOTAL	341	278	619

Still-born Children—White, 25; colored, 32; total, 57.

Population of City (estimated)—White, 276,000; colored, 102,000; total, 378,000.

Death Rate per 1000 per annum for month—White, 14.82; colored, 32.71; total 19.65. Non-residents excluded, 16.99.

METEOROLOGIC SUMMARY (U. S. Weather Bureau).

Mean atmospheric pressure. 30.02
Mean temperature. 83
Total precipitation. . . . . 8.35 inches
Prevailing direction of wind, southwest.